Biodiversity Data Journal 2: e1068
doi: 10.3897/BDJ.2.e1068

open access

Taxonomic paper

Recent noteworthy findings of fungus gnats from Finland and northwestern Russia (Diptera: Ditomyiidae, Keroplatidae, Bolitophilidae and Mycetophilidae)

Jevgeni Jakovlev[†], Jukka Salmela[‡,§], Alexei Polevoi[|], Jouni Penttinen[¶], Noora-Annukka Vartija[#]

† Finnish Environment Insitutute, Helsinki, Finland
‡ Metsähallitus (Natural Heritage Services), Rovaniemi, Finland
§ Zoological Museum, University of Turku, Turku, Finland
| Forest Research Institute KarRC RAS, Petrozavodsk, Russia
¶ Metsähallitus (Natural Heritage Services), Jyväskylä, Finland
# Toivakka, Myllyntie, Finland

Corresponding author: Jukka Salmela (jukka.e.salmela@gmail.com)

Academic editor: Vladimir Blagoderov

Received: 10 Feb 2014 | Accepted: 01 Apr 2014 | Published: 02 Apr 2014

Citation: Jakovlev J, Salmela J, Polevoi A, Penttinen J, Vartija N (2014) Recent noteworthy findings of fungus gnats from Finland and northwestern Russia (Diptera: Ditomyiidae, Keroplatidae, Bolitophilidae and Mycetophilidae). Biodiversity Data Journal 2: e1068. doi: 10.3897/BDJ.2.e1068

Abstract

New faunistic data on fungus gnats (Diptera: Sciaroidea excluding Sciaridae) from Finland and NW Russia (Karelia and Murmansk Region) are presented. A total of 64 and 34 species are reported for the first time form Finland and Russian Karelia, respectively. Nine of the species are also new for the European fauna: *Mycomya shewelli* Väisänen, 1984, *M. thula* Väisänen, 1984, *Acnemia trifida* Zaitzev, 1982, *Coelosia gracilis* Johannsen, 1912, *Orfelia krivosheinae* Zaitzev, 1994, *Mycetophila biformis* Maximova, 2002, *M. monstera* Maximova, 2002, *M. uschaica* Subbotina & Maximova, 2011 and *Trichonta palustris* Maximova, 2002.

Keywords

Sciaroidea, Fennoscandia, faunistics

© Jakovlev J et al. This is an open access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Introduction

Fungus gnats or mycetophilids (Diptera: Bolitophilidae, Diadocidiidae, Ditomyiidae, Keroplatidae, and Mycetophilidae) are a very rich assemblage of thread-horned (Nematocera) flies with more than 1,100 species that occur in Europe (Bechev 2000, Chandler 2004 and subsequent contributions by various authors). In contrast to many other insect groups, they seem to display an increasing species richness towards the north and are especially common and diverse in boreal forest environments. Research on fungus gnats in the Fennoscandian region has been greatly revitalized during the last two decades, after a period of relatively little activity. At present the north European fungus gnat fauna is the subject of several intensive taxonomical and ecological investigations (see e.g. Kjaerandsen et al. 2007, Kjaerandsen et al. 2009, Jakovlev 2011a, Søli and Rindal 2012, Halme et al. 2013, Polevoi 2013a). Currently, the Checklist of North European (Fennoscandia, NW Russia, Denmark, Iceland) fungus gnats includes 898 species (Kjaerandsen 2012). This makes up a major proportion of the entire European fungus gnat fauna.

Regional checklists have been recently compiled and updated for Sweden (Kjaerandsen et al. 2007), Iceland (Kjaerandsen et al. 2007a), and Norway (Gammelmo and Rindal 2006, Gammelmo and Søli 2006, Rindal and Gammelmo 2007, Kjaerandsen and Jordal 2007, Søli and Rindal 2012). The most recent Fennoscandian checklist is available through the Fungus Gnats Online (Kjaerandsen 2012).

A list of Finnish fungus gnats was provided by W. Hackman (Hackman 1980), including 486 species. During the past decade dozens of new species have been reported from Finland (e.g. Polevoi et al. 2006), including descriptions of new taxa (Polevoi and Hedmark 2004, Jakovlev and Penttinen 2007, Jakovlev and Polevoi 2008, Polevoi and Jakovlev 2011). The 2010 Finnish Red List assessment of fungus gnats was based on a regional species pool consisting of 734 species (Penttinen et al. 2010). The 102 red-listed fungus gnat species include 12 threatened species (Endangered [EN], Vulnerable [VU]: *Symmerus nobilis, Macrocera crassicornis, Acnemia amoena, Anaclileia dziedzickii, Sciophila salassea, Mycetophila cingulum, M. sigmoides, Synplasta bayardi*) and five other species (Near Threatened [NT], Data Deficient [DD]: *Bolitophila ingrica, Urytalpa atriceps, Brevicornu cognatum, Synplasta pseudingeniosa, Sceptonia flavipuncta*) that have not formally been reported from Finland. These species are treated here, accompanied with exact occurrence data.

The Russian Karelian fungus gnat fauna was thoroughly treated by Polevoi (Polevoi 2000), totaling a list of 616 species. However, dozens of species have been since either recorded or described from Russian Karelia (e.g. Polevoi and Hedmark 2004, Humala and Polevoi 2008, Polevoi and Jakovlev 2011). Species occurring in Murmansk region have not been listed, but no less than 330 fungus gnats were found from a single nature reserve close to the Finnish and Norwegian border (Polevoi 2010).

In this paper we list a total of 64 and 34 species new to the Finnish and Russian Karelian fauna, respectively; 10 of these species are also reported for the first time from Europe. We also report other noteworthy findings of fungus gnat species made by the authors in Finland and Russia (Murmansk Region and Russian Karelia). A total of 131 fungus gnat species are treated. These additions raise the total number of fungus gnat species recorded from Finland and Russian Karelia to 768 and 676 species, respectively.

Materials and methods

The majority of the material presented here was collected by using Malaise traps (Fig. 1). Malaise (length 110, height 140, width 70 cm) is a trap model made of cloth (black sides, white "roof", or unicolorous) and is suitable for collecting low-flying insects, such as dipterans. The traps were usually installed in the beginning of the snow-free season and removed from the field in September or October. During the deployment, collecting jars were emptied in roughly four week intervals. Two types of preservatives were used in the traps: a solution of 50 % ethylene glycol + a few drops of detergent, and 70 % ethanol. The collected material was finally stored in 70 – 80 % ethanol. In addition to Malaise traps, a minor portion of the material was collected with trunk-window traps, eclector traps and sweep netting. Most of the studied specimens are preserved in ethanol, but for some specimens, KOH macerated abdominal terminalia are preserved in separate microvials in glycerol. The following acronyms for museums and collections are used in the text: MZHF – Finnish Museum of Natural History (Zoological Museum), University of Helsinki, Helsinki, Finland; FRIP – Forest Research Institute, Petrozavodsk, Russia; JES – private collection of Jukka Salmela, Rovaniemi, Finland; JPJ – private collection of Jouni Penttinen, Jyväskylä, Finland; JJH – private collection of Jevgeni Jakovlev, Helsinki, Finland.

Figure 1.

Malaise trapping of forest dwelling insects in Karkali Strict Nature Reserve (Finland, Karjalohja, hemiboreal zone). This nature reserve is one of the most famous Finnish herb-rich forests, harbouring fungus gnat species such as *Mycomya collini* Edwards, *Eudicrana nigriceps* (Lundström) and *Mycetophila sigmoides* Loew.

The arrangement of the treated species follows Bechev (2000): Ditomyiidae, Keroplatidae (Orfelini, Macrocerini), Bolitophilidae, Mycetophilidae (Mycomyinae, Sciophilinae, Gnoristinae, Leiinae, Mycetophilinae [Exechiini, Mycetophilini]).

Extended depth of field photos displaying male terminalia were taken using an Olympus SZX16 stereomicroscope attached to an Olympus E520 digital camera. Digital photos were captured and combined using the programmes Deep Focus 3.1 and Quick PHOTO CAMERA 2.3.

Asterisks after species names correspond to: * - new to Finland, ** - new to the Republic of Karelia and *** - new to Europe. Red List acronyms given here follow IUCN categories: DD=Data Deficient, EN=Endangered, VU=Vulnerable, NT=Near Threatened.

Taxon treatments

Symmerus annulatus (Meigen, 1830)**

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=135078

Materials

a. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Lahdenpohja, 9 km NE of Sukopohja; decimalLatitude: 61.688; decimalLongitude: 30.159; geodeticDatum: WGS84; samplingProtocol: Sweep net; eventDate: 2005-7-7; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

b. country: Finland; stateProvince: Karelia ladogensis; municipality: Parikkala; locality: Siikalahti; decimalLatitude: 61.556; decimalLongitude: 29.558; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

c. country: Finland; stateProvince: Nylandia; municipality: Kirkkonummi; locality: Kuokkamaa; decimalLatitude: 60.121; decimalLongitude: 24.608; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2010-7-12/8-23; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

d. country: Finland; stateProvince: Nylandia; municipality: Kirkkonummi; locality: Kuokkamaa; decimalLatitude: 60.121; decimalLongitude: 24.608; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2010-8-23/10-9; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

e. country: Finland; stateProvince: Nylandia; municipality: Kirkkonummi; locality: Kuokkamaa; decimalLatitude: 60.121; decimalLongitude: 24.608; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2010-6-17/7-13; habitat: old-growth forest, herb-rich type; individualCount: 2; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

f. country: Finland; stateProvince: Nylandia; municipality: Kirkkonummi; locality: Kuokkamaa; decimalLatitude: 60.121; decimalLongitude: 24.608; geodeticDatum: WGS84; samplingProtocol: Reared from wood; eventDate: 2010-7-12/8-23; habitat: old-

growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

g. country: Finland; stateProvince: Nylandia; municipality: Kirkkonummi; locality: Kuokkamaa; decimalLatitude: 60.121; decimalLongitude: 24.608; geodeticDatum: WGS84; samplingProtocol: Reared from wood; eventDate: 2010-7-17/7-13; habitat: old-growth forest, herb-rich type; individualCount: 2; sex: 1 male, 1 female; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

h. country: Finland; stateProvince: Nylandia; municipality: Kirkkonummi; locality: Kuokkamaa; decimalLatitude: 60.121; decimalLongitude: 24.608; geodeticDatum: WGS84; samplingProtocol: Reared from wood; eventDate: 2010-8-23/10-9; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

i. country: Finland; stateProvince: Nylandia; municipality: Kirkkonummi; locality: Norra flaget; decimalLatitude: 60.113; decimalLongitude: 24.625; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2010-8-23/10-9; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

j. country: Finland; stateProvince: Nylandia; municipality: Kirkkonummi; locality: Norra flaget; decimalLatitude: 60.113; decimalLongitude: 24.625; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2010-6-19/7-13; habitat: old-growth forest, herb-rich type; individualCount: 2; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

k. country: Finland; stateProvince: Nylandia; municipality: Kirkkonummi; locality: Norra flaget; decimalLatitude: 60.113; decimalLongitude: 24.625; geodeticDatum: WGS84; samplingProtocol: Reared from wood; eventDate: 2010-8-23/10-9; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

l. country: Finland; stateProvince: Regio aboënsis; municipality: Tammisaari; locality: Dragsvikin kartano; decimalLatitude: 60.001; decimalLongitude: 23.491; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2010-6-18/7-14; habitat: two isolated herb-rich forests divided with sea gulf and wet meadow. Spruce-dominated, partly dominated with Alnus glutinosa. Huge willows; individualCount: 2; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

m. country: Finland; stateProvince: Regio aboënsis; municipality: Tammisaari; locality: Dragsvikin kartano; decimalLatitude: 60.001; decimalLongitude: 23.491; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2010-8-24/9-4; habitat: two isolated herb-rich forests divided with sea gulf and wet meadow. Spruce-dominated, partly dominated with Alnus glutinosa. Huge willows; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

Distribution

Palaearctic, besides Europe recorded from Caucasus and West Siberia (Zaitzev 1994). Widely distributed in Europe, including Fennoscandia (Chandler 2004). Recorded only from southern areas in Sweden (Kjaerandsen et al. 2007) and Norway (Gammelmo and Rindal 2006). In Finland has been found also in the southernmost parts of the country (as *Pleasiastina annulata*, Lundström 1909). New to the Republic of Karelia.

Ecology

Larvae develop in rotten wood, feeding on the mycelia that it contains. The species has been reared from larvae found in rotten wood of deciduous trees only: beech (*Fagus*), elm (*Ulmus*) and lime (*Tilia*) (Krivosheina and Mamaev 1967, Zaitzev 1994). Chandler (Chandler 1993) reported the rearing of *S. annulatus* from a hard ascomycete fungus *Hypoxylon rubiginosum*. The Karelian specimen was collected from a young grey alder (*Alnus incana*) forest.

Conservation

Red-listed in Norway (VU, Anonymous 2010, Gammelmo et al. 2010).

Symmerus nobilis Lackschewitz, 1937*

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=135088

Materials

a. country: Russia; stateProvince: Republic Karelia; verbatimLocality: 3 km S of Kosmozero; decimalLatitude: 62.297; decimalLongitude: 35.088; geodeticDatum: WGS84; samplingProtocol: Sweep net; eventDate: 2013-6-26; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

b. country: Finland; stateProvince: Regio aboensis; verbatimLocality: Turku, Ruissalo; decimalLatitude: 60.432; decimalLongitude: 22.165; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2005-5-11/6-20; individualCount: 1; sex: male; recordedBy: J. Jakovlev; G. Ståhls; identifiedBy: J. Jakovlev; institutionCode: JJH

Distribution

European. *Symmerus nobilis* was described from Latvia (Lackschewitz 1937) and has been found in several countries of Central Europe (Chandler 2004, Zaitzev 1994), but is considered everywhere a rare species. From the well-studied British Isles it was recorded only from one site in Scotland (Glen Coiltie, Easterness) (Falk and Chandler 2005). In the Fennoscandian region, the species was recorded only recently from southern parts of Norway (Gammelmo and Rindal 2006, Kjaerandsen and Jordal 2007), south Sweden (Jakovlev et al. 2008), the Kivach Nature Reserve in Russian Karelia (two female specimens, Polevoi 2000). No former records from Finland.

Ecology

All collecting records of adults are from broadleaved forests, with the exception of Russian Karelia which lies entirely in the boreal forest zone. The Russian Karelian sites are spruce dominated forests with a high proportion of aspen (*Populus tremula*). The Finnish record is from a herb-rich spruce-dominated forest with aspen, birch, lime and oak (*Quercus robur*). Both the Finnish and the Karelian sites are old growth forests on fertile soils with a high amount of dead aspen wood, in which larvae of the species

most likely develop. Larvae live in decaying wood, as indicated by rearing records from beech (Zaitzev 1994).

Conservation

Red-listed in Finland (VU, Penttinen et al. 2010), Norway (VU, Anonymous 2010, Gammelmo et al. 2010) and Sweden (NT, Cederberg et al. 2010).

Isoneuromyia semirufa Meigen, 1818

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=138603

Materials

a. genus: Isoneuromyia; specificEpithet: semirufa; scientificNameAuthorship: Meigen, 1818; country: Finland; stateProvince: Regio kuusamoensis; municipality: Kuusamo; locality: Kuusamo; decimalLatitude: 65.967; decimalLongitude: 29.174; geodeticDatum: WGS84; habitat: boreal forest_Myrtillus type; individualCount: 1; sex: male; institutionCode: MZHF

b. genus: Isoneuromyia; specificEpithet: semirufa; scientificNameAuthorship: Meigen, 1818; country: Finland; stateProvince: Nylandia; municipality: Kirkkonummi; locality: Kuokkamaa; decimalLatitude: 60.121; decimalLongitude: 24.608; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2010-6-20/8-23; habitat: old-growth forest_herb-rich type; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

c. genus: Isoneuromyia; specificEpithet: semirufa; scientificNameAuthorship: Meigen, 1818; country: Finland; stateProvince: Nylandia; municipality: Helsinki; locality: Itäsalmi; decimalLatitude: 60.252; decimalLongitude: 25.204; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2010-6-15/7-23; habitat: herb-rich forest dominated by aspen and spruce, young maples.; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

d. genus: Isoneuromyia; specificEpithet: semirufa; scientificNameAuthorship: Meigen, 1818; country: Finland; stateProvince: Regio aboënsis; municipality: Salo; locality: Vaisakko; decimalLatitude: 60.361; decimalLongitude: 23.045; geodeticDatum: WGS84; eventDate: 2009-6-1/6-15; habitat: herb-rich forest_seminatural; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

e. genus: Isoneuromyia; specificEpithet: semirufa; scientificNameAuthorship: Meigen, 1818; country: Finland; stateProvince: Regio aboënsis; municipality: Karjalohja; locality: Karkali_South; decimalLatitude: 60.238; decimalLongitude: 23.785; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-6-1/6-15; habitat: old-growth forest_herb-rich type; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

f. genus: Isoneuromyia; specificEpithet: semirufa; scientificNameAuthorship: Meigen, 1818; country: Finland; stateProvince: Satakunta; municipality: Ikaalinen; locality: Multinharju; decimalLatitude: 61.907; decimalLongitude: 23.299; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-7-2/8-24; habitat: old-growth forest_Myrtillus type; individualCount: 1; sex: male; recordedBy: M.Jaschhof and C.Jaschhof; identifiedBy: J.Jakovlev; institutionCode: JJH

g. genus: Isoneuromyia; specificEpithet: semirufa; scientificNameAuthorship: Meigen, 1818; country: Finland; stateProvince: Regio kuusamoënsis; municipality: Kuusamo; locality: Kuusamo; decimalLatitude: 65.966; decimalLongitude: 29.174; geodeticDatum: WGS84;

samplingProtocol: Sweep netting; eventDate: 1964; individualCount: 1; sex: male; recordedBy: R.Tuomikoski; identifiedBy: W.Hackman; institutionCode: MZHF

h. genus: Isoneuromyia; specificEpithet: semirufa; scientificNameAuthorship: Meigen, 1818; country: Finland; stateProvince: Satakunta; municipality: Yläne; locality: Yläne; decimalLatitude: 60.870; decimalLongitude: 22.393; geodeticDatum: WGS84; eventDate: 1900; individualCount: 1; sex: male; recordedBy: R.Frey; identifiedBy: C.Lundström; institutionCode: MZHF

i. genus: Isoneuromyia; specificEpithet: semirufa; scientificNameAuthorship: Meigen, 1818; country: Finland; stateProvince: Regio aboënsis; municipality: Karjalohja; locality: Sammati; decimalLatitude: 60.319; decimalLongitude: 23.829; geodeticDatum: WGS84; eventDate: 1900; individualCount: 1; sex: male; recordedBy: J.Sahlberg; identifiedBy: C.Lundström; institutionCode: MZHF

j. genus: Isoneuromyia; specificEpithet: semirufa; scientificNameAuthorship: Meigen, 1818; country: Finland; stateProvince: Tavastia australis; municipality: Forssa; locality: Forssa; decimalLatitude: 60.817; decimalLongitude: 23.614; geodeticDatum: WGS84; eventDate: 1900; individualCount: 1; sex: female; recordedBy: Krogerus; identifiedBy: C.Lundström; institutionCode: MZHF

k. genus: Isoneuromyia; specificEpithet: semirufa; scientificNameAuthorship: Meigen, 1818; country: Finland; stateProvince: Ostrobothnia borealis pars borealis; verbatimLocality: Tornio, Rakanjänkkä; decimalLatitude: 65.890; decimalLongitude: 24.317; geodeticDatum: WGS84; eventDate: 2012-7-2/8-6; habitat: rich spring fen; individualCount: 1; sex: male; recordedBy: J. Salmela; institutionCode: JES

l. genus: Isoneuromyia; specificEpithet: semirufa; scientificNameAuthorship: Meigen, 1818; country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Silmäsvuoma; decimalLatitude: 67.582; decimalLongitude: 25.543; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-6-26/7-27; habitat: rich fen, aapamire; individualCount: 1; sex: male; catalogNumber: MYCE-NV-2013-0060; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

m. genus: Isoneuromyia; specificEpithet: semirufa; scientificNameAuthorship: Meigen, 1818; country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Kielisenpalo; decimalLatitude: 68.020; decimalLongitude: 25.063; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-6-26/7-27; habitat: rich spring fen; individualCount: 1; sex: male; catalogNumber: MYCE-NV-2013-0098; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

n. genus: Isoneuromyia; specificEpithet: semirufa; scientificNameAuthorship: Meigen, 1818; country: Finland; stateProvince: Ostrobothnia borealis pars borealis; verbatimLocality: Tornio, Ruuttulammi; decimalLatitude: 66.207; decimalLongitude: 24.898; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-2/8-6; habitat: rich fen; individualCount: 3; sex: male; catalogNumber: MYCE-JS-2012-0050; recordedBy: Jukka Salmela; identifiedBy: J. Salmela; institutionCode: JES

o. genus: Isoneuromyia; specificEpithet: semirufa; scientificNameAuthorship: Meigen, 1818; country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-10/8-16; habitat: Headwater stream, old-growth boreal forest; individualCount: 1; sex: male; recordedBy: Jukka Salmela; institutionCode: JES

p. genus: Isoneuromyia; specificEpithet: semirufa; scientificNameAuthorship: Meigen, 1818; country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja; decimalLatitude: 67.846; decimalLongitude: 29.471; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-10/8-16;

habitat: Headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0036; recordedBy: Jukka Salmela; identifiedBy: J. Salmela; institutionCode: JES

q. country: Finland; stateProvince: Regio kuusamoensis; verbatimLocality: Salla, Kuntasjoki, Värriö Strict Nature Reserve; verbatimElevation: 320 m; decimalLatitude: 67.749; decimalLongitude: 29.617; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2013; verbatimEventDate: 2013-6-29/7-29; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: DIPT-JS-2014-0032; recordedBy: J. Salmela; T. Hietajärvi; identifiedBy: J. Salmela; institutionCode: JES

Distribution

Holarctic, widely distributed in Europe (Chandler 2004). Wide range in Sweden (Kjaerandsen et al. 2007) and in the Republic of Karelia (Polevoi 2013a). In Finland mainly collected from the southern parts of the country, except for an old record from NW Lapland, Muonio (Lundström 1914).

Ecology

New records from Lapland are mainly from calcareous spring fens and rich fens, but also from headwater streams with rich riparian vegetation. In the light of these new records *I. semirufa* (Fig. 2) is perhaps not confined to forest habitats, but may also thrive in peatlands. Immature stages are unknown.

Figure 2.

Isoneuromyia semirufa (Meigen), male specimen collected from Tervola, North Finland, lateral view.

Conservation

Red-listed in Finland (NT, Penttinen et al. 2010).

Orfelia krivosheinae Zaitzev, 1994***

- Catalogue of Life http://www.catalogueoflife.org/col/details/species/id/8717088

Material

a. country: Finland; stateProvince: Karelia ladogensis; verbatimLocality: Parikkala, Niukkala; decimalLatitude: 61.729; decimalLongitude: 29.887; geodeticDatum: WGS84; samplingProtocol: Trunk window trap on *Betula* trunk; eventDate: 2012-6-20/7-19; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0269; recordedBy: Seppo Karjalainen; identifiedBy: J. Salmela; J. Jakovlev; institutionCode: JES

Distribution

Palaearctic. *Orfelia krivosheinae* (Fig. 3) was described from Russia, Tuva (Central Asia, Zaitzev 1994). No published records are available besides the original description. New for Europe.

Figure 3.

Orfelia krivosheinae Zaitzev. Male specimen collected from Parikkala, south eastern Finland.

a: Habitus, lateral view.

b: Habitus, dorsal view.

c: Male hypopgium, tergal view. Arrow points to the apex of sinuous style bearing a dense cluster of hairs.

d: Male hypopygium, sternal view.

Ecology

The type material was reared from larvae found on mycelium in a decaying poplar *(Populus)* tree (Zaitzev 1994). The Finnish specimen was taken from a trunk-window trap set on a birch trunk.

Orfelia lugubris (Zetterstedt, 1851)*

Materials

a. country: Finland; stateProvince: Ostrobothnia borealis pars borealis; verbatimLocality: Tervola, Ruuttulammi; decimalLatitude: 66.207; decimalLongitude: 24.898; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-6/9-26; habitat: rich spring fen; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0208; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

b. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-10/8-16; habitat: headwater stream, seminatural boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2012-0046; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

c. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; habitat: headwater stream, seminatural boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0021; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

d. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja; decimalLatitude: 67.846; decimalLongitude: 29.471; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-10/8-16; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0038; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

e. country: Finland; stateProvince: Lapponia enontekiensis; verbatimLocality: Enontekiö, Palojoensuu; decimalLatitude: 68.285; decimalLongitude: 23.095; geodeticDatum: WGS84; eventDate: 1865; individualCount: 1; sex: male; recordedBy: A. Palmen; identifiedBy: C. Lundström; J. Jakovlev; institutionCode: MZHF

f. country: Russia; stateProvince: Republic Karelia; verbatimLocality: White Sea, is. Pechak; decimalLatitude: 64.625; decimalLongitude: 35.631; geodeticDatum: WGS84; samplingProtocol: sweep net; eventDate: 2001-7-24; individualCount: 1; sex: male; recordedBy: A. Humala; identifiedBy: A. Polevoi; institutionCode: FRIP

g. country: Russia; stateProvince: Republic Karelia; verbatimLocality: White Sea, is. Russkiy Kuzov; decimalLatitude: 64.935; decimalLongitude: 35.128; geodeticDatum: WGS84; samplingProtocol: sweep net; eventDate: 2001-7-18; individualCount: 2; sex: male; recordedBy: A. Humala; identifiedBy: A. Polevoi; institutionCode: FRIP

h. country: Russia; stateProvince: Republic Karelia; verbatimLocality: White Sea, Perhludy archipelago, is. Yuzhnyi; decimalLatitude: 64.323; decimalLongitude: 36.481; geodeticDatum: WGS84; samplingProtocol: sweep net; eventDate: 2002-8-16; individualCount: 1; sex: male; recordedBy: A. Humala; identifiedBy: A. Polevoi; institutionCode: FRIP

Distribution

Palaearctic. Widely distributed in Europe. Many of the older records were made as *O. tristis* Lundström, a junior synonym of *O. lugubris* (Kjaerandsen et al. 2007). The species occurs in central and northern Sweden (Kjaerandsen et al. 2007), the White Sea shore in Russian Karelia (Humala and Polevoi 2008), and Norway (Kjaerandsen 2012). New for Finland.

Ecology

Finnish records are from rich spring fens and headwater streams surrounded by coniferous forests. Karelian specimens were collected in riparian habitats of the White Sea. Immature stages are unknown. Generally, *Orfelia* species are web-spinners chiefly associated with dead wood (Jakovlev 2012).

Orfelia pallida (Stæger, 1840)**

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=138560

Materials

a. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Obzha, Mayachino; decimalLatitude: 60.777; decimalLongitude: 32.818; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-22/28; individualCount: 6; sex: 5 males, 1 female; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

b. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Mikhailovskoe, Novikovo; decimalLatitude: 61.096; decimalLongitude: 33.755; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008-7-1/3; individualCount: 2; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

c. country: Russia; stateProvince: Leningrad province; verbatimLocality: Podporozhje, Peldozhi; decimalLatitude: 61.027; decimalLongitude: 34.488; geodeticDatum: WGS84; samplingProtocol: Yellow pan trap; eventDate: 2008-7-3/4; individualCount: 3; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

d. country: Finland; stateProvince: Ab; municipality: Tammisaari; locality: Dragsvikin kartano; decimalLatitude: 60.000; decimalLongitude: 23.492; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2010-6-18/7-14; habitat: herb-rich forest and wet meadow, spruce-dominated, partly dominated with Alnus glutinosa. Huge willows; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

Distribution

European, mainly nemoral, recorded from Ireland, Britain, the Netherlands, Belgium, Germany, Poland, Czech Republic and Estonia (Chandler 2004). Few records are known from the Nordic region, from Denmark (Petersen and Meier 2001), Sweden (only a single record, Kjaerandsen et al. 2007), and from Norway, without indication of the collecting locality (Rindal et al. 2008). In Finland the presence of the species was based on Hackman's (Hackman 1980) checklist. However, the original sources of that

record are unknown. In fact, the only exemplar in the MZHF collection "Diptera Fennica" identified as *O. pallida* actually belongs to *Macrorrhyncha rostrata* Zetterstedt. New for the Republic of Karelia.

Ecology

The Finnish record is from a herb-rich, spruce dominated forest site adjacent to a sea gulf and a wet meadow with moist black alder stands. Huge willows (*Salix*) and plenty of dead wood are present as well. Karelian records are from herb-rich deciduous forests and a black alder fen. Immature stages are unknown.

Conservation

Due to the ambiguous occurrence data, the species was not included in the 2010 Red List of Finnish species. However, it is likely that *O. pallida* is very rare in Finland and perhaps confined to hemiboreal deciduous forests.

Monocentrota lundstromi Edwards, 1925**

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=138574

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Silmäsvuoma; decimalLatitude: 67.582; decimalLongitude: 25.543; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-6-26/7-27; habitat: rich fen, aapamire; individualCount: 1; sex: male; catalogNumber: MYCE-NV-2013-0058; recordedBy: J. Salmela; identifiedBy: J. Salmela; N. Vartija; institutionCode: JES

b. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Lahdenpohja, Niva; decimalLatitude: 61.615; decimalLongitude: 30.276; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2005-7-7/8; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

c. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Zaozer'e, Pin'guba; decimalLatitude: 61.864; decimalLongitude: 34.558; geodeticDatum: WGS84; samplingProtocol: Yellow pan trap; eventDate: 2011-6-29/7-3; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

d. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Gomsel'ga; decimalLatitude: 62.059; decimalLongitude: 33.995; geodeticDatum: WGS84; samplingProtocol: Yellow pan trap; eventDate: 2012-7-4/6; individualCount: 2; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

e. country: Finland; stateProvince: Nylandia; municipality: Espoo; locality: Espoo; decimalLatitude: 60.210; decimalLongitude: 24.652; geodeticDatum: WGS84; eventDate: 1962; habitat: herb-rich forest; individualCount: 1; sex: female; recordedBy: W.Hackman; identifiedBy: W.Hackman; institutionCode: MZHF

f. country: Finland; stateProvince: Karelia ladogensis; municipality: Virolahti; locality: Virolahti; decimalLatitude: 60.579; decimalLongitude: 27.708; geodeticDatum: WGS84; eventDate: 1971; individualCount: 1; sex: female; recordedBy: L.Tiensuu; identifiedBy: W.Hackman; institutionCode: MZHF

g. country: Finland; stateProvince: Regio aboënsis; municipality: Turku; locality: Ruissalo; decimalLatitude: 60.432; decimalLongitude: 22.165; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2005-7-13/8-27; habitat: old-growth forest, herb-rich type; individualCount: 2; sex: 1 male, 1 female; recordedBy: J.Jakovlev and G.Ståhls; identifiedBy: J.Jakovlev; institutionCode: JJH

h. country: Finland; stateProvince: Nylandia; municipality: Helsinki; locality: Tullisaari, Stansvikin kartano; decimalLatitude: 60.166; decimalLongitude: 25.027; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2011-6-12/8-2; habitat: City park with numerous old hollow deciduous trees, mainly lime trees, oaks and maples; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

i. country: Finland; stateProvince: Nylandia; municipality: Helsinki; locality: Tuomarinkylä; decimalLatitude: 60.261; decimalLongitude: 24.965; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2011-7-5/7-20; habitat: Wood-storage areas in Helsinki; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

Distribution

European. *Monocentrota lundstromi* (Fig. 4) is rare and poorly known in Fennoscandia. In Norway it is known from two localities in western part of the country (Kjaerandsen and Jordal 2007) and in Sweden it has been collected from a single locality in the zone of boreonemoral (or hemiboreal) forests (Kjaerandsen et al. 2007). No former records from the Republic of Karelia. Finnish records are from southern, eastern and northern parts of the country.

Figure 4.

Monocentrota lundstromi Edwards, male specimen collected from Finland, dorsal view.

Figure 5.

Malaise trapping sites from Finnish Lapland.

a: Tornio, Rakanjänkkä, rich spring fen, dominated by brown mosses such as *Scorpidium revolverns*, *S. cossoni*, *Paludella squarrosa* and *Sphagnum warnstorfii*. Vascular plant flora includes *Carex* spp., *Dactylorhiza incarnata* and *Parnassia palustris*. J. Salmela 6/2012.

b: Sodankylä, Pomokaira, Kaita-aapa, aapamire, intermediate rich flark fen. Moss flora characterized by *Sphagnum* spp. and *Warnstorfia procera*. Flarks are wet, moss covered areas surrounded by the narrow, hummock level strings. Aapamires are widespread mire types in the northern and middle boreal vegetation zones of West European and East Siberian plains, and in parts of boreal Canada. Aapamires are minerogenous in contrast to bogs that only receive nutrients from rain water. J. Salmela 6/2012.

c: Savukoski, Joutenoja, headwater stream surrounded by boreal mixed forest. Meadow is dominated by *Filipendula ulmaria*, *Angelica archangelica*, *Viola* spp. and *Urtica dioica* ssp. *sondenii*. In the forest conifers *Pinus sylvestris* and *Picea abies* are common, with mixed *Betula* spp. J. Salmela 6/2012.

d: Sodankylä, Heinäaapa, rich spring fen, dominated by mosses *Palustriella falcata*, *Philonotis sp*., and *Scorpidium cossoni*. Vascular plants such as *Saxifraga hirculus*, *Saussurea alpina* and *Bartsia alpina* are conspicuous. 8/2012.

e: Utsjoki, Kaldoaivi, Galddasjohka. A diverse headwater stream with luxuriant riparian vegetation. The surroundigns are open fell areas, but a narrow strip of mountain birch (*Betula pubescens* ssp. *czerepanovii*) is present in the valley. J. Salmela 7/2007.

f: Sodankylä, Pomokaira, Paistipuolet NW, poor sloping fen surrounded by spruce mire. Characterized by large sedges (*Carex* spp.) and *Sphagnum riparium*. J. Salmela 6/2009.

Ecology

The collecting locality in Kittilä is a large aapamire (see Fig. 5b for a definition of aapamire), dominated by rich fen vegetation. There are some small birch (*Betula pubescens*) trees growing on the mire, but the landscape is otherwise open. The specimens from the Republic Karelia have been collected from populated areas and clearcuts. Often attracted to light, active around dawn (Hutson et al. 1980). Larvae probably develop in decaying wood. The only rearing record is from southern Sweden: adults were collected with an eclector trap over a piece of oak log (Mats Jonsell leg., Jevgeni Jakovlev det. 2005).

Conservation

Red-listed in Finland (NT, Penttinen et al. 2010) and Norway (VU, Anonymous 2010, Gammelmo et al. 2010).

Pyratula subcanariae Chandler & Blasco-Zumeta, 2001*

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=138526

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; habitat: headwater stream, seminatural boreal forest; individualCount: 2; sex: male; catalogNumber: MYCE-JS-2013-0197; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

b. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja; decimalLatitude: 67.846; decimalLongitude: 29.471; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0155; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

c. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja; decimalLatitude: 67.846; decimalLongitude: 29.471; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-10/8-16; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0192; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

d. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja, Ahot; decimalLatitude: 67.816; decimalLongitude: 29.426; geodeticDatum: WGS84; samplingProtocol: Sweep net; eventDate: 2013-8-7; habitat: natural meadow; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0260; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

e. country: Finland; stateProvince: Regio kuusamoensis; verbatimLocality: Salla, Värriö, Kuntasjoki; verbatimElevation: 330 m; decimalLatitude: 67.749; decimalLongitude: 29.616; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2013-6-29/7-29; habitat: headwater stream, old-growth forest; individualCount: 1; sex:

male; catalogNumber: MYCE-JS-2013-0363; recordedBy: J. Salmela, T. Hietajärvi; identifiedBy: J. Salmela; institutionCode: JES

Distribution

European. Very poorly known species, described from Switzerland, Leuk (Chandler and Blasco-Zumeta 2001) and later reported from Bulgaria, eastern Danubian plain (Bechev 2006). The collecting site of the holotype is apparently mountainous whereas the Bulgarian site is only 150 m above sea level. Also collected from northern Sweden (Kjaerandsen 2012, J. Kjaerandsen, pers. comm.).

Ecology

Finnish localities are headwater streams with luxuriant riparian vegetation surrounded by coniferous forests. One of the sites (Törmäoja, Ahot) is a treeless, sloping meadow with short herbs and grasses on a moraine soil. Immature stages are unknown. The related species, *P. zonata* has been collected with eclector traps on ground vegetation, moss carpets, and mineral soil under root plate of wind felled tree (Økland 1999) and on decaying trunks of aspen and goat willow, *Salix caprea* (J. Jakovlev, unpublished).

Urytalpa atriceps (Edwards, 1913)*

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=138508

Materials

a. country: Finland; stateProvince: Savonia australis; municipality: Rantasalmi; locality: Linnansaari; decimalLatitude: 62.116; decimalLongitude: 28.477; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008-7-25/9-4; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

b. country: Finland; stateProvince: Regio kuusamoensis; verbatimLocality: Salla, Kuntasjoki, Värriö Strict Nature Reserve; verbatimElevation: 320 m; decimalLatitude: 67.749; decimalLongitude: 29.617; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2013; verbatimEventDate: 2013-6-29/7-29; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: DIPT-JS-2014-0036; recordedBy: J. Salmela; T. Hietajärvi; identifiedBy: J. Salmela; institutionCode: JES

Distribution

European. Known from England, the Netherlands, Norway and Sweden (Kjaerandsen et al. 2009). Reported here formally as a new species for Finland.

Ecology

Immature stages are unknown. Linnansaari (south boreal zone) is a lush semi-dry herb-rich forest with human influence (most likely former slash-and-burn forest) where aspen is in many parts the dominant tree species with lime, birch and spruce.

Collecting site in Salla (north boreal zone) is a luxuriant headwater stream with swampy margings, surrounded by pristine spruce forest.

Conservation

Red-listed in Finland (DD, Penttinen et al. 2010) and Sweden (NT, Cederberg et al. 2010).

Urytalpa galdes Hedmark & Kjaerandsen, 2009*

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; municipality: Muonio; locality: Pallas-Yllästunturi National Park; decimalLatitude: 68.018; decimalLongitude: 24.153; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-7-15/8-14; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev

b. country: Finland; stateProvince: Regio kuusamoensis; verbatimLocality: Salla, Kuntasjoki, Värriö Strict Nature Reserve; verbatimElevation: 320 m; decimalLatitude: 67.749; decimalLongitude: 29.617; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2013; verbatimEventDate: 2013-6-29/7-29; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: DIPT-JS-2014-0033; recordedBy: J. Salmela; T. Hietajärvi; identifiedBy: J. Salmela; institutionCode: JES

Distribution

Fennoscandian. The species is previously known only from the type locality in northern Sweden (Lule Lapmark, Kjaerandsen et al. 2009). The first record from Finland.

Ecology

Nothing is known of the life histories of *Urytalpa* spp.; they may be similar to those of *Pyratula* spp. Finnish collecting sites are old-growth boreal forests.

Urytalpa macrocera (Edwards, 1913)*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=138509

Materials

a. country: Finland; stateProvince: Lapponia inarensis; municipality: Utsjoki; locality: Galddasjohka; decimalLatitude: 69.860; decimalLongitude: 27.770; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-7-19/8-27; habitat: subarctic stream valley; individualCount: 1; sex: male; recordedBy: J.Salmela; identifiedBy: J.Jakovlev; institutionCode: JJH

b. country: Finland; stateProvince: Lapponia inarensis; municipality: Utsjoki; locality: Galddasjohka; decimalLatitude: 69.861; decimalLongitude: 27.790; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-7-19/8-27; habitat: subarctic

stream valley; individualCount: 1; sex: male; recordedBy: J.Salmela; identifiedBy: J.Jakovlev; institutionCode: JJH

Distribution

European, known only in northern Britain (Scotland and northern England), France, Norway, Sweden and the Netherlands (Kjaerandsen et al. 2009). No former records from Finland.

Ecology

Finnish localities are two close lying trapping sites in a river valley surrounded by a strip of mountain birch forest in the northernmost Lapland (Fig. 5e). From Great Britain recorded from moist deciduous forest (Falk and Chandler 2005). Immature stages are unknown.

Macrocera crassicornis Winnertz, 1864*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=138434

Materials

a. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Kotinen_Aspen part; decimalLatitude: 61.244; decimalLongitude: 25.067; geodeticDatum: WGS84; samplingProtocol: Reared from soil; eventDate: 2006-8-3/8-30; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev; institutionCode: JJH

b. country: Finland; stateProvince: Tavastia borealis; municipality: Saarijärvi; locality: Pyhä-Häkki National Park; decimalLatitude: 62.836; decimalLongitude: 25.473; geodeticDatum: WGS84; samplingProtocol: Reared from dead spruce log; eventDate: 2006-8-3/8-30; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev; institutionCode: JJH

c. country: Finland; stateProvince: Tavastia borealis; municipality: Saarijärvi; locality: Pyhä-Häkki National Park; decimalLatitude: 62.836; decimalLongitude: 25.473; geodeticDatum: WGS84; samplingProtocol: Reared from dead pine wood; eventDate: 2006-8-3/8-30; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev; institutionCode: JJH

Distribution

Palaearctic. *Macrocera crassicornis* (Fig. 6) has a rather wide range in central and southern Europe, also known from Near East and North Africa (Chandler 2004, Zaitzev 1994). Included in the Finnish Red List assessment (Penttinen et al. 2010), here formally reported as new for Finland.

Figure 6.

Macrocera crassicornis Meigen, male specimen collected from Finland, lateral view.

Ecology

Reared from soil and dead coniferous wood. Finnish collecting sites are old-growth spruce dominated forests situated in the south boreal vegetation zone.

Conservation

Threatened fungus gnat species in Finland (VU, Penttinen et al. 2010).

Macrocera fascipennis Staeger, 1840

- Fauna europaea http://www.faunaeur.org/full_results.php?id=138442

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Sodankylä, Pomokaira, Kaita-aapa; decimalLatitude: 67.845; decimalLongitude: 26.553; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-4/8-7; habitat: intermediate rich fen, aapamire; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2012-0010; recordedBy: J. Salmela; identifiedBy: J. Salmela, A. Polevoi; institutionCode: JES

b. country: Finland; stateProvince: Karelia borealis; municipality: Ilomantsi; locality: Pirhu_1; decimalLatitude: 62.971; decimalLongitude: 31.395; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2004-7-8/7-8; habitat: young unmanaged forest; individualCount: 1; sex: male; recordedBy: M.Jaschhof and C.Jaschhof; identifiedBy: J.Jakovlev; institutionCode: JJH

c. country: Finland; stateProvince: Regio aboënsis; municipality: Karjalohja; locality: Karjalohja_unknown_locality; decimalLatitude: 60.245; decimalLongitude: 23.746; geodeticDatum: WGS84; eventDate: 1900; individualCount: 1; sex: male; recordedBy: J.Sahlberg; identifiedBy: C.Lundström; institutionCode: MZHF

d. country: Finland; stateProvince: Tavastia australis; municipality: Tammela?; locality: Mäntyharju; decimalLatitude: 61.968; decimalLongitude: 23.697; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 1900; individualCount: 1; sex: female; recordedBy: R.Frey; identifiedBy: C.Lundström; institutionCode: MZHF

e. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo; decimalLatitude: 61.196; decimalLongitude: 25.099; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 1953; individualCount: 1; sex: male; recordedBy: R.Tuomikoski; identifiedBy: W.Hackman; institutionCode: MZHF

f. country: Finland; stateProvince: Regio aboensis; municipality: Vihti; locality: Vihtijärvi; decimalLatitude: 60.523; decimalLongitude: 24.556; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 1962-7-29/-7-29; individualCount: 1; sex: female; recordedBy: R.Tuomikoski; identifiedBy: W.Hackman; institutionCode: MZHF

Distribution

Palaearctic. In Europe recorded from the British Isles, Central and northern Europe (Chandler 2004). In Fennoscandia recorded from Finland, Russian Karelia (Lundström 1906) and Murmansk region (Lundström 1909), also known from Denmark. Hitherto collected only from a few Finnish localities in southern (Lundström 1906) and eastern Finland (Polevoi 2001a).

Ecology

Reared from a tussock of *Scirpus sylvaticus* in Czech Republic (Ševčík and Roháček 2008). The locality in Sodankylä, Kaita-aapa, is a large, open aapamire with intermediate rich vegetation. *Scirpus sylvaticus* was not present, but several other Cyperaceae species were abundant in the mire (*Carex* spp., *Trichophorum* spp., *Eriophorum* spp.).

Macrocera grandis Lundström, 1912**

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=138446

Materials

a. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Obzha, Tabanovskyi mayak; decimalLatitude: 60.757; decimalLongitude: 32.815; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2012-6-25; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

b. country: Finland; stateProvince: Satakunta; municipality: Kokemäki; locality: Kokemäki; decimalLatitude: 61.254; decimalLongitude: 22.317; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 1953; individualCount: 1; sex: male; recordedBy: R.Tuomikoski; identifiedBy: W.Hackman; institutionCode: MZHF

c. country: Finland; stateProvince: Nylandia; municipality: Espoo; locality: Kolmperä; decimalLatitude: 60.244; decimalLongitude: 24.523; geodeticDatum: WGS84; eventDate: 1964-7-21/7-21; individualCount: 1; sex: male; recordedBy: W.Hackman; identifiedBy: J.R.Vockeroth; institutionCode: MZHF

d. country: Finland; stateProvince: Tavastia borealis; municipality: Äänekoski; locality: Kivipuro; decimalLatitude: 62.563; decimalLongitude: 25.511; geodeticDatum: WGS84;

samplingProtocol: sweep net; eventDate: 2008; habitat: spruce mire along a creek, surrounded by managed forest; individualCount: 1; sex: male; recordedBy: J.Salmela; identifiedBy: J.Penttinen; institutionCode: JPJ

Distribution

Palaearctic. Described from Finland (Lundström 1912a), later recorded from Ural and Altai (Zaitzev 1994) and from Europe, chiefly from northern areas: Norway, Sweden, Finland, NW Russia, Baltic countries, Germany (Chandler 2004, Kjaerandsen et al. 2007). New to the Republic of Karelia.

Ecology

The species is very rare. There are only four Finnish records, one of these was made more than a hundred years ago (Lundström 1912b, SW Finland, Kaarina, Kuusisto). The only recent finding is from a headwater stream surrounded by a spruce mire (Central Finland, Äänekoski). The Karelian specimen was collected at the edge of a small settlement near a herb-rich aspen dominated forest. Immature stages are unknown, other species of the genus have been reared from soil, clumps of turf, rotting wood and cave walls and are considered predaceous (Falk and Chandler 2005, Ševčík and Roháček 2008, Jakovlev 2012).

Conservation

Red-listed in Finland (NT, Penttinen et al. 2010) and Norway (VU, Anonymous 2010, Gammelmo et al. 2010).

Bolitophila (*Cliopisa*) *ingrica* Stackelberg, 1969*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=129995

Materials

a. country: Finland; stateProvince: Lapponia enontekiensis; verbatimLocality: Kilpisjärvi, Saana Mt, southern slope; decimalLatitude: 69.0456; decimalLongitude: 20.8186; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-8-1/15; individualCount: 1; sex: male; recordedBy: J. Jakovlev; J. Penttinen; institutionCode: JJH

b. country: Finland; stateProvince: Lapponia enontekiensis; verbatimLocality: Kilpisjärvi, Saana Mt, southern slope; decimalLatitude: 69.0456; decimalLongitude: 20.8186; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-8-16/31; individualCount: 1; sex: male; recordedBy: J. Jakovlev; J. Penttinen; institutionCode: JJH

c. country: Finland; stateProvince: Lapponia enontekiensis; verbatimLocality: Kilpisjärvi, Saana Mt, southern slope; decimalLatitude: 69.0456; decimalLongitude: 20.8186; geodeticDatum: WGS84; samplingProtocol: sweep net; eventDate: 2006-8-20/21; individualCount: 2; sex: male; recordedBy: J. Jakovlev; institutionCode: JJH

d. country: Finland; stateProvince: Savonia australis; verbatimLocality: Rantasalmi, Linnansaari; decimalLatitude: 62.116; decimalLongitude: 28.476; geodeticDatum:

WGS84; samplingProtocol: Malaise trap; eventDate: 2008-5-20/6-24; individualCount: 1; sex: male; recordedBy: J. Penttinen; identifiedBy: J. Penttinen; institutionCode: JPJ

Distribution

European. A rare species described from Leningrad Region in northwest Russia (Ostroverkhova and Stackelberg 1988) and later found in a few places in Central Europe: Germany, Slovakia, Switzerland (Chandler 2004), and from Vologda, Kostroma and Moscow Regions of northwest and central Russia (Zaitzev 1994). In Fennoscandia found from the Republic of Karelia (Polevoi 2000), Sweden (Kjaerandsen et al. 2007) and Norway (Kjaerandsen and Jordal 2007). Included in the recent Finnish Red List, although here formally reported as a new species for the Finnish fauna.

Ecology

Finnish collecting localities are a herb-rich coniferous forest with a large proportion of birch and aspen in the southeastern Finland (Rantasalmi) and a sub-arctic mountain birch (*Betula pubescens* ssp. *czerepanovii*) forest with herb-rich vegetation in the slopes of Saana Mountain in northwestern Lapland. Immature stages are unknown. Generally, *Bolitophila* larvae develop inside soft fungi (Jakovlev 2012).

Conservation

Red-listed in Finland (NT, Penttinen et al. 2010).

Mycomya (*Coheromyia*) *branderi* Väisänen, 1984

- Fauna europaea http://www.faunaeur.org/full_results.php?id=139509

Materials

a. country: Finland; stateProvince: Nylandia; verbatimLocality: Espoo, Matalajärvi; decimalLatitude: 60.247; decimalLongitude: 24.686; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-21/8-23; habitat: swampy lake shore; individualCount: 10; sex: male; catalogNumber: MYCE-JS-2013-0333; recordedBy: Jari Ilmonen; identifiedBy: J. Salmela; institutionCode: JES

b. country: Finland; stateProvince: Nylandia; verbatimLocality: Espoo, Matalajärvi; decimalLatitude: 60.247; decimalLongitude: 24.686; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-23/10-20; individualCount: 12; sex: 10 males, 2 females; catalogNumber: MYCE-JS-2013-0280; recordedBy: Jari Ilmonen; identifiedBy: J. Salmela; institutionCode: JES

c. country: Finland; stateProvince: Karelia ladogensis; verbatimLocality: Parikkala, Siikalahti; decimalLatitude: 61.562; decimalLongitude: 29.599; geodeticDatum: WGS84; samplingProtocol: Sweep net; eventDate: 2004-8-19; habitat: swampy forest; individualCount: 1; sex: male; recordedBy: M. Jaschhof; C. Jaschhof; identifiedBy: J. Jakovlev; institutionCode: JJH

Distribution

European. Very rare and poorly known species, so far recorded from South Finland, Denmark and Great Britain (Väisänen 1984, Chandler 1992).

Ecology

Mycomya branderi is most likely associated with wetlands. The British records are from wetlands (Chandler 1992) and two recent Finnish localities are a swampy lake shore (Espoo) and a birch/alder swamp forest on a lake shore (Parikkala). Immature stages are unknown.

Conservation

Red-listed in Finland (VU, Penttinen et al. 2010).

Mycomya (Mycomya) britteni Kidd, 1955

- Fauna europaea http://www.faunaeur.org/full_results.php?id=139525

Material

a. country: Finland; stateProvince: Nylandia; verbatimLocality: Espoo, Matalajärvi; decimalLatitude: 60.246; decimalLongitude: 24.687; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-21/8-23; habitat: swampy lake shore; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0337; recordedBy: Jari Ilmonen; identifiedBy: J. Salmela; institutionCode: JES

Distribution

European. Very rare species, hitherto recorded only from Great Britain, Finland (Väisänen 1984, Karjalohja, South Finland) Norway (Gammelmo and Søli 2006), Sweden (Kjaerandsen 2012) and Czech Republic (Ševčík and Roháček 2008).

Ecology

Mostly likely a wetland-dwelling species. Reared from sedge (*Carex*) tussocks in Czech Republic (Ševčík and Roháček 2008). The Finnish locality is a swampy lake shore, and the only Norwegian record is from a lake shore wetland (Anonymous 2010). Immature stages are unknown.

Conservation

Red-listed in Norway (VU, Anonymous 2010, Gammelmo et al. 2010).

Mycomya (*Mycomya*) *collini* Edwards, 1941**

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=139535

Materials

a. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Onezhskoe lake, island Paleostrov; decimalLatitude: 62.569; decimalLongitude: 35.261; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2004-7-3; individualCount: 2; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

b. country: Finland; stateProvince: Regio aboensis; verbatimLocality: Karjalohja, Karkali; decimalLatitude: 60.238; decimalLongitude: 23.785; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-6-16/8-23; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J. Jakovlev; identifiedBy: J. Jakovlev; institutionCode: JJH

c. country: Finland; stateProvince: Tavastia australis; verbatimLocality: Lahti, Mukkula; decimalLatitude: 61.017; decimalLongitude: 25.643; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-6-15/8-15; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J. Penttinen; identifiedBy: J. Penttinen; institutionCode: JPJ

Distribution

European. Rare species known by few records from Great Britain, Germany, Switzerland, Estonia, Norway and Finland (Edwards 1941, Väisänen 1984, Chandler 2004, Kjaerandsen and Jordal 2007), recently found also in Slovakia (Ševčík and Kurina 2011). Here reported for the first time from Russia. Only two previous collecting localities in South Finland (Väisänen 1984).

Ecology

New records from Russian Karelia (Paleostrov Island) and Finland (Lahti) are from herb-rich old-growth forests on fertile soil close to lake shores. Immature stages are unknown.

Mycomya (*Mycomya*) *fuscata* (Winnertz, 1863)

- Fauna europaea http://www.faunaeur.org/full_results.php?id=139549

Material

a. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; habitat: headwater stream, seminatural boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2012-0069; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

Distribution

Holarctic. In Europe a boreo-montane species (Kjaerandsen et al. 2007). Fennoscandian records are from the northernmost parts of Norway (Søli and Rindal 2012), Sweden (Kjaerandsen et al. 2007) and Murmansk region (Väisänen 1984), from a total of four localities. Only one previous Finnish record from Kainuu, mid boreal vegetation zone (Polevoi et al. 2006).

Ecology

Poorly known species. Finnish collecting sites are an old-growth boreal forest (Kainuu, Polevoi et al. 2006) and a headwater stream with rich riparian vegetation, surrounded by a nearly pristine coniferous forest (Joutenoja). Immature stages are unknown.

Mycomya (*Mycomya*) *fornicata* (Lundström, 1911)**

- http://www.faunaeur.org/full_results.php?id=139548

Material

a. genus: Mycomya; subgenus: Mycomya; specificEpithet: fornicata; scientificNameAuthorship: (Lundström, 1911); country: Russia; stateProvince: Republic Karelia; verbatimLocality: White Sea, is. Kondostrov; decimalLatitude: 64.225; decimalLongitude: 36.621; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 08/21/2002; individualCount: 1; sex: male; recordedBy: A. Humala; identifiedBy: A. Polevoi; institutionCode: FRIP

Distribution

Palaearctic. Rare species known by few records from the European Alps, Yakutia and Amur Province (Väisänen 1984, Zaitzev 1994, Krzemińska and Klimont 2011). No former records from Fennoscandia; new to the Republic of Karelia.

Ecology

The Karelian specimen was collected in *Vaccinium myrtillus* type spruce dominated forest. Immature stages are unknown.

Myomya (*Mycomya*) *islandica* Väisänen, 1984**

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=139568

Material

a. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Paanajärvi, 2 km W of Selkäjoki river mouth; decimalLatitude: 66.259; decimalLongitude: 29.968; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2000-7-4; individualCount: 2; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

Distribution

Holarctic. Recorded from northern regions of Europe and North America (Väisänen 1984, Kjaerandsen et al. 2007). New to the Republic of Karelia.

Ecology

Collected in *Vaccinium myrtillus* type spruce dominated forest. Immature stages are unknown.

Mycomya (*Mycomya*) *lambi* Edwards, 1941

- Fauna europaea http://www.faunaeur.org/full_results.php?id=139572

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; habitat: headwater stream, seminatural boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0066; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

b. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja; decimalLatitude: 67.846; decimalLongitude: 29.471; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0152; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

c. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja, Ahot; decimalLatitude: 67.816; decimalLongitude: 29.426; geodeticDatum: WGS84; samplingProtocol: Sweep net; eventDate: 2013-8-7; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0261; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

Distribution

Holarctic. In Europe perhaps a boreo-montane species (Kjaerandsen et al. 2007), also recorded from the Faroes (Kjaerandsen and Jørgensen 1992) and from two coastal sites in Scotland (Falk and Chandler 2005). In Fennoscandia known from Finland, Norway and Sweden. Rather poorly known and rarely collected in Sweden (northern provinces JÄ and TO, Kjaerandsen et al. 2007). In Norway recorded from Finnmark, the northernmost part of the country (Søli and Rindal 2012). A few scattered Finnish records (Väisänen 1984), mainly from old-growth forests.

Ecology

New records from Savukoski are from headwater streams with rich riparian vegetation surrounded by coniferous forests. One of the sites (Törmäoja, Ahot) is a sloping meadow with short herbs and grasses on a moraine soil. Immature stages are unknown.

Mycomya (*Mycomya*) *safena* Väisänen, 1984*

- Catalogue of Life http://www.catalogueoflife.org/col/details/species/id/8662701

Materials

a. country: Finland; stateProvince: Lapponia enontekiensis; verbatimLocality: Pallas-Yllästunturi National Park, Röyninkuru; verbatimElevation: 380 m; decimalLatitude: 68.146; decimalLongitude: 24.071; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2013-6-5/7-6; habitat: headwater stream, old-growth spruce forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0383; recordedBy: J. Salmela; S. Lapinniemi; identifiedBy: J. Salmela; institutionCode: JES

b. country: Finland; stateProvince: Regio kuusamoensis; verbatimLocality: Salla, Kuntasjoki, Värriö Strict Nature Reserve; verbatimElevation: 320 m; decimalLatitude: 67.749; decimalLongitude: 29.617; geodeticDatum: WGS84; samplingProtocol: Malaise trap; verbatimEventDate: 2013-6-29/7-29; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: DIPT-JS-2014-0041; recordedBy: J. Salmela; T. Hietajärvi; identifiedBy: J. Salmela; institutionCode: JES

Distribution

Holarctic. Described from the USA and Canada (Väisänen 1984). Recently reported by Polevoi (Polevoi 2010) for the first time from the Palaearctic region (NW Russia, Murmansk region). New for Finland.

Ecology

The Finnish collecting sites are headwater streams surrounded by old-growth boreal, spruce dominated forests in Lapland. Immature stages are unknown.

Mycomya (*Mycomya*) *shewelli* Väisänen, 1984***

- Catalogue of Life http://www.catalogueoflife.org/col/details/species/id/8662703

Material

a. country: Finland; stateProvince: Nylandia; verbatimLocality: Espoo, Matalajärvi, SW shore; verbatimElevation: 23 m; decimalLatitude: 60.247; decimalLongitude: 24.686; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-21/8-23; habitat: swampy lake shore; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0320; recordedBy: Jari Ilmonen; identifiedBy: J. Salmela; institutionCode: JES

Distribution

Holarctic. *Mycomya shewelli* (Fig. 7) was described from the Nearctic region (USA: Michigan, Canada: North West Territories, Manitoba, Väisänen 1984), with no previous records from the Palaearctic region. New for the European fauna.

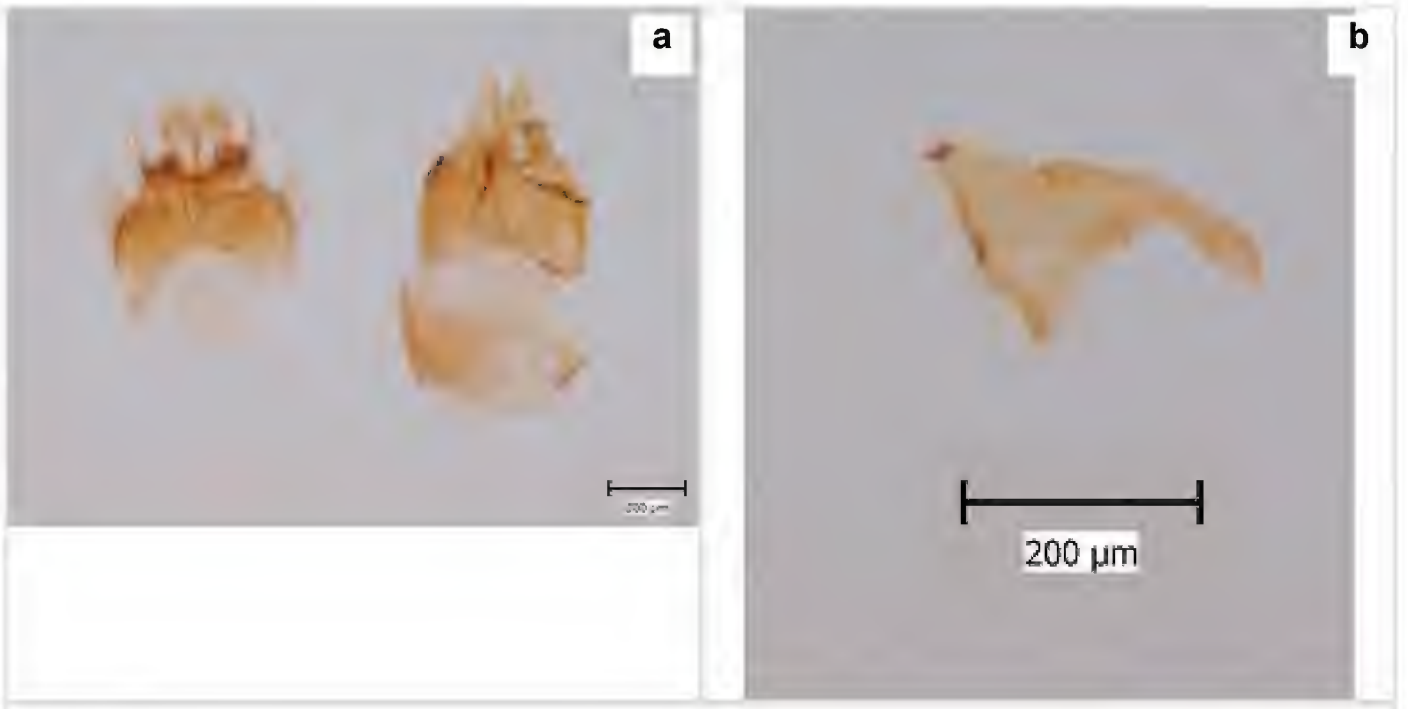

Figure 7.

Mycomya shewelli Väisänen, male specimen collected from Espoo, South Finland.

a: Male hypopygium, 9th tergite (left, dorsal view) and sternal synsclerite (right, ventro-lateral view).

b: Male hypopygium, gonostylus.

Ecology

Poorly known species, immature stages are unknown. The Finnish collecting site is a diverse black alder (*Alnus glutinosa*) swamp in a lake shore (Espoo, South Finland).

Mycomya (*Mycomya*) *sieberti* Landrock, 1930*

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=139607

Material

a. country: Finland; stateProvince: Karelia ladogensis; verbatimLocality: Parikkala, Siikalahti; decimalLatitude: 61.562; decimalLongitude: 29.599; geodeticDatum: WGS84; samplingProtocol: Sweep net; eventDate: 2004-6-8; habitat: old managed swampy forest; individualCount: 7; sex: male; recordedBy: M. Jaschhof; C. Jaschhof; identifiedBy: J. Jakovlev; institutionCode: JJH

Distribution

Palaearctic. A very rare species known so far only from Russia (Leningrad oblast and Russian Far East) and from Latvia (Väisänen 1984). No former records from other European countries (Chandler 2004). New to Finland.

Ecology

The only Finnish sampling site is an old, managed swampy forest in southern Finland. Immature stages are unknown.

Mycomya (*Mycomya*) *thula* Väisänen, 1984***

- Catalogue of Life http://www.catalogueoflife.org/col/details/species/id/8662705

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; habitat: headwater stream, seminatural boreal forest; individualCount: 3; sex: 2 males, 1 female; catalogNumber: MYCE-JS-2012-0071; recordedBy: J. Salmela; identifiedBy: J. Salmela; A. Polevoi; institutionCode: JES

b. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja; decimalLatitude: 67.846; decimalLongitude: 29.471; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-10/8-16; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2012-0006; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

Distribution

Holarctic. The description of *M. thula* (Fig. 8) was based on a holotype male from USA, Alaska (Väisänen 1984), with no further records. New for the Palaearctic region and the first record of this species from Finland.

Ecology

Extremely poorly known species. Finnish collecting sites are headwater streams with rich riparian vegetation, surrounded by coniferous forests. Immature stages are unknown.

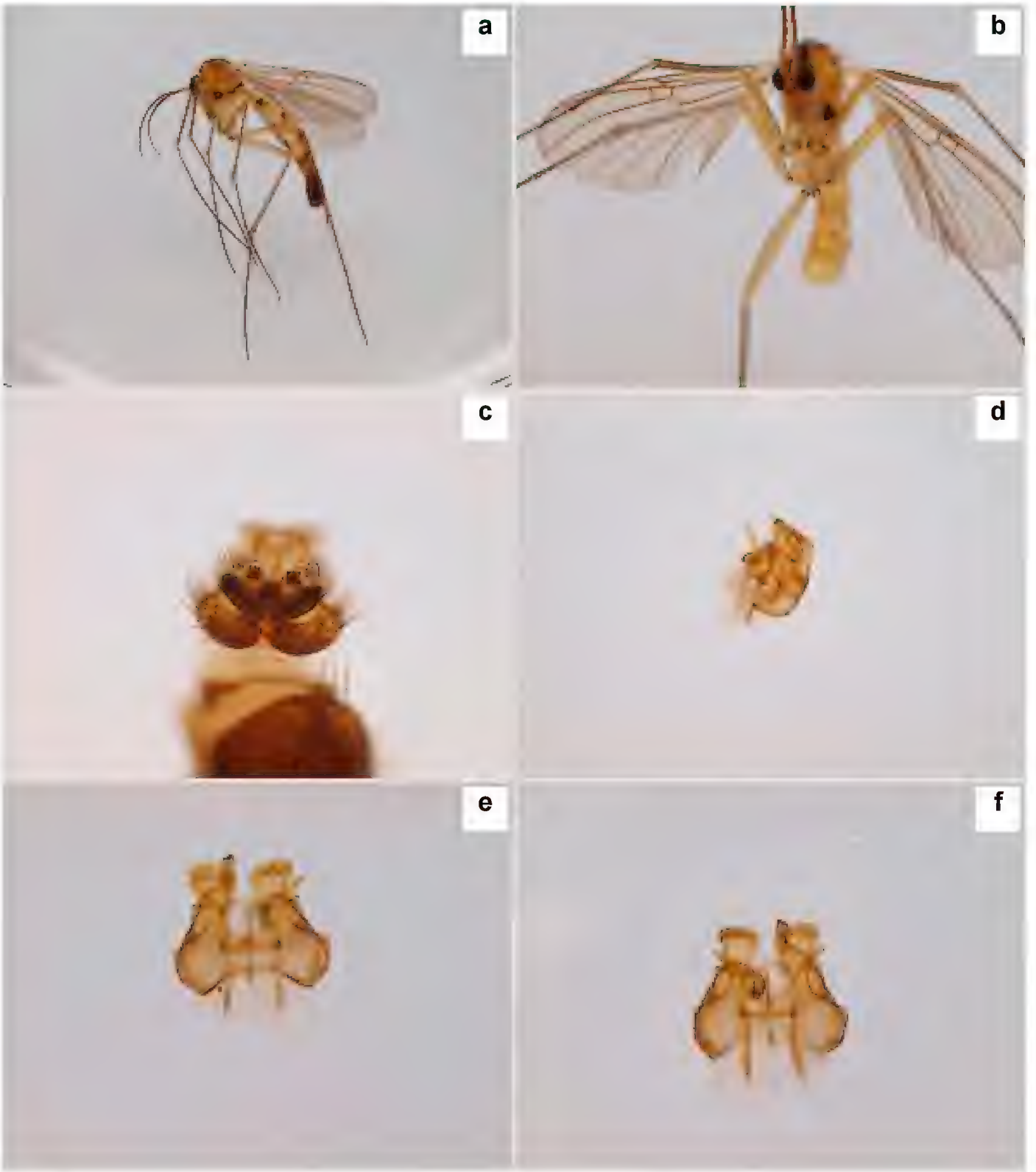

Figure 8.

Mycomya thula Väisänen, male specimen collected from Finland, Savukoski (northeastern Lapland).

a: Habitus, lateral view.
b: Habitus, frontal view.
c: Male hypopygium, dorsal view.
d: Male hypopygium, lateral view (9th tergite removed).
e: Sternal synsclerite, ventral view.
f: Sternal synsclerite and parameres, dorsal view.

Mycomya (*Mycomyopsis*) *fennica* Väisänen, 1979

- Fauna europaea http://www.faunaeur.org/full_results.php?id=139643

Materials

a. country: Finland; stateProvince: Regio aboensis; verbatimLocality: Turku, Pomponrahka; decimalLatitude: 60.508; decimalLongitude: 22.250; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2011-8-15/10-3; habitat: rich fen; individualCount: 31; sex: male; recordedBy: J. Salmela; identifiedBy: N. Vartija; institutionCode: JES

b. country: Finland; stateProvince: Nylandia; verbatimLocality: Espoo, Matalajärvi; verbatimElevation: 23 m; decimalLatitude: 60.247; decimalLongitude: 24.686; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-21/10-20; habitat: swampy lake shore; individualCount: 24; sex: male; recordedBy: Jari Ilmonen; identifiedBy: J. Salmela

c. country: Finland; stateProvince: Ostrobothnia borealis pars borealis; verbatimLocality: Tornio, Rakanjänkkä; decimalLatitude: 65.890; decimalLongitude: 24.317; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-6/9-26; habitat: rich spring fen; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2012-0011; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

d. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Sodankylä, Heinäaapa; decimalLatitude: 67.596; decimalLongitude: 26.883; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-10/9-19; habitat: rich spring fen; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2012-0023; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

e. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Akaharamanvuoma; decimalLatitude: 67.593; decimalLongitude: 25.302; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-8-2/9-3; habitat: intermediate rich flark fen; individualCount: 1; sex: male; catalogNumber: MYCE-NV-2013-0013; recordedBy: J. Salmela; identifiedBy: N. Vartija; institutionCode: JES

f. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Vasanvuoma; decimalLatitude: 67.582; decimalLongitude: 25.203; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-8-2/9-3; habitat: rich fen; individualCount: 7; sex: male; catalogNumber: MYCE-NV-2013-0031; recordedBy: J. Salmela; identifiedBy: N. Vartija; institutionCode: JES

Distribution

European. Known from northern Europe, Estonia, Austria, Germany and NW Russia (Chandler 2004). In Fennoscandia only known from Norway (Søli and Kjaerandsen 2008) and Finland (Väisänen 1984).

Ecology

The species is most likely associated with peatlands (Väisänen 1984, Søli and Kjaerandsen 2008). All new material presented here was collected from mires, invariably from minerotrophic rich fens. Immature stages are unknown.

Acnemia amoena Winnertz, 1864*

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=139484

Materials

a. country: Finland; stateProvince: Nylandia; municipality: Helsinki; locality: Tuomarinkylä; decimalLatitude: 60.262; decimalLongitude: 24.966; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2011-6-5/7-4; habitat: Wood-storage area in Helsinki; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

b. country: Finland; stateProvince: Savonia australis; municipality: Rantasalmi; locality: Linnansaari; decimalLatitude: 62.113; decimalLongitude: 28.479; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008-5-20/6-24; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

c. country: Finland; stateProvince: Nylandia; municipality: Vantaa; locality: Kylmäoja, Valkoisenlahdentie; decimalLatitude: 60.303; decimalLongitude: 25.015; geodeticDatum: WGS84; samplingProtocol: pit-fall traps in dead wood storage area; eventDate: 2011-6-10/7-3; habitat: herb-rich forest; individualCount: 1; sex: female; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

Distribution

Palaearctic. Widely distributed in Central Europe, Mediterranean countries (Spain, Italy, Malta) and found also in Israel, the Near East (Chandler 1994, Chandler 2004) and Northern Caucasus (Zaitzev 1994). From northern Europe only known from Sweden (Kjaerandsen et al. 2007) and Denmark (Petersen and Meier 2001). Included in the recent Red List assessment of Finnish species (Penttinen et al. 2010), but here formally reported for the first time from Finland.

Ecology

Larvae are saproxylic. They develop on the surface of dead wood impregnated with fungal mycelium (Zaitzev 1994). Finnish specimens were collected in semi-urban habitats (Helsinki city parks) and in herb-rich forests with exceptionally fertile soils (Linnansaari, Rantasalmi) in the southern parts of the country.

Conservation

Threatened species in Finland (VU, Penttinen et al. 2010)

Acnemia trifida Zaitzev, 1982***

- Catalogue of Life http://www.catalogueoflife.org/col/details/species/id/8662688

Materials

a. genus: Acnemia; specificEpithet: trifida; scientificNameAuthorship: Zaitzev, 1982; country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Kielisenpalo; decimalLatitude: 68.020; decimalLongitude: 25.063; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-8-2/9-3; habitat: rich spring fen; individualCount: 2; sex: male; catalogNumber: MYCE-NV-2013-0089; recordedBy: J. Salmela; identifiedBy: N. Vartija; J. Salmela; institutionCode: JES

b. genus: Acnemia; specificEpithet: trifida; scientificNameAuthorship: Zaitzev, 1982; country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Nunaravuoma; decimalLatitude: 67.699; decimalLongitude: 25.353; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-8-2/9-3; habitat: poor sedge fen; individualCount: 14; sex: male; catalogNumber: MYCE-NV-2013-0080; recordedBy: J. Salmela; identifiedBy: N. Vartija; J. Salmela; institutionCode: JES

Distribution

Holarctic. Hitherto only known from North America (USA, Zaitzev 1982a). Here reported for the first time from the Palaearctic region, new for Finland.

Ecology

Both collecting sites are pristine north boreal aapamires; Nunaravuoma is a poor sedge fen and Kielisenpalo a rich spring fen. Immature stages are unknown.

Anaclileia dispar (Winnertz, 1863)*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=139472

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Pomokaira, Tarpomapää; decimalLatitude: 67.820; decimalLongitude: 25.919; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-6-1/29; individualCount: 4; sex: male; catalogNumber: MYCE-NV-2013-0238; recordedBy: J. Salmela; identifiedBy: N. Vartija; institutionCode: JES

b. country: Finland; stateProvince: Regio kuusamoensis; verbatimLocality: Salla, Kuntasjoki, Värriö Strict Nature Reserve; verbatimElevation: 320 m; decimalLatitude: 67.749; decimalLongitude: 29.617; geodeticDatum: WGS84; samplingProtocol: Malaise trap; verbatimEventDate: 2013-6-4/29; habitat: headwater stream, old-growth boreal forest; individualCount: 2; sex: male; catalogNumber: MYCE-JS-2013-0400; recordedBy: J. Salmela; T. Hietajärvi; identifiedBy: J. Salmela; institutionCode: JES

Distribution

European. Rather wide range in Central Europe (Bechev 1990), records from Fennoscandia are few and scattered. In Sweden only known from Lule Lapmark (North Sweden, Kjaerandsen et al. 2007). In Norway recorded from the oceanic SW part of the country (Kjaerandsen and Jordal 2007). Also known from the Republic of Karelia, in the northern part of the White Sea shore (Humala and Polevoi 2008). New for Finland.

Ecology

The life history of *A. dispar* is not known. The Finnish collecting sites are small lotic waters surrounded by moist old-growth boreal forests.

Anaclileia dziedzickii (Landrock, 1911)*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=139474

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Sodankylä, Paistipuolet; decimalLatitude: 67.836; decimalLongitude: 26.216; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-6-1/29; individualCount: 1; sex: male; catalogNumber: MYCE-NV-2013-0044; recordedBy: J. Salmela; identifiedBy: N. Vartija; J. Salmela; institutionCode: JES

b. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Sodankylä, Tarpomapää E; decimalLatitude: 67.831; decimalLongitude: 25.993; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-6-1/29; individualCount: 1; sex: male; catalogNumber: MYCE-NV-2013-0133; recordedBy: J. Salmela; identifiedBy: N. Vartija; J. Salmela; institutionCode: JES

c. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Tarpomapää; decimalLatitude: 67.820; decimalLongitude: 25.919; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-6-1/29; individualCount: 1; sex: male; catalogNumber: MYCE-NV-2013-0239; recordedBy: J. Salmela; identifiedBy: N. Vartija; institutionCode: JES

d. country: Finland; stateProvince: Tavastia borealis; municipality: Saarijärvi; locality: Mastomäki S 1; decimalLatitude: 62.836; decimalLongitude: 25.474; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008-5-8/6-11; habitat: old-growth forest, Myrtillus-Oxalis type; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

e. country: Finland; stateProvince: Tavastia borealis; municipality: Saarijärvi; locality: Pyhä-Häkki National Park; decimalLatitude: 62.836; decimalLongitude: 25.475; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

f. country: Finland; stateProvince: Regio kuusamoensis; verbatimLocality: Salla, Kuntasjoki, Värriö Strict Nature Reserve; verbatimElevation: 320 m; decimalLatitude: 67.749; decimalLongitude: 29.617; geodeticDatum: WGS84; samplingProtocol: Malaise trap; verbatimEventDate: 2013-6-4/29; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: DIPT-JS-2014-0002; recordedBy: J. Salmela; T. Hietajärvi; identifiedBy: J. Salmela; institutionCode: JES

Distribution

European. Recorded from Central and northern Europe (Chandler 2004). Very rare and poorly known in Fennoscandia, only a few findings from Sweden (Lule Lapmark, Kjaerandsen et al. 2007) and Russian Karelia (Karelia keretina, Yakovlev et al. 2000). The species was included in the recent Finnish Red List assessment, but is here formally reported for the first time from Finland.

Ecology

Finnish collecting localities are aapamires and old-growth boreal forests. In Russian Karelia found only in the intact forest area in Paanajärvi National Park (Polevoi 2000, Yakovlev et al. 2000). Immature stages are unknown; related genera develop in fungi or rotten wood.

Conservation

Threatened species in Finland (VU, Penttinen et al. 2010).

Eudicrana nigriceps (Lundström, 1909)**

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=140890

Materials

a. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Obzha, Mayachino; decimalLatitude: 60.777; decimalLongitude: 32.818; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2012-6-25; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

b. country: Finland; stateProvince: Ostrobothnia borealis pars borealis; verbatimLocality: Ylitornio, Mustiaapa-Kaattasjärvi, Mustipalo N; decimalLatitude: 66.473; decimalLongitude: 25.012; geodeticDatum: WGS84; samplingProtocol: sweep net; eventDate: 2013-06-20; habitat: spruce mire; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0367; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

c. country: Finland; stateProvince: Alandia; municipality: Hammarland; locality: Äppelö; decimalLatitude: 60.372; decimalLongitude: 19.700; geodeticDatum: WGS84; eventDate: 1900; individualCount: 1; sex: male; recordedBy: E.Olund; identifiedBy: C.Lundström; institutionCode: MZHF

d. country: Finland; stateProvince: Ostrobothnia australis; municipality: Pietarsaari; locality: Jakobstad; decimalLatitude: 63.665; decimalLongitude: 22.672; geodeticDatum: WGS84; eventDate: 1932-9-26/9-26; individualCount: 1; sex: male; recordedBy: R.Store; identifiedBy: W.Hackman; institutionCode: MZHF

e. country: Finland; stateProvince: Regio aboënsis; municipality: Sauvo; locality: Karuna; decimalLatitude: 60.264; decimalLongitude: 22.550; geodeticDatum: WGS84; eventDate: 1934-4-8/4-8; individualCount: 1; sex: male; recordedBy: R.Storå; identifiedBy: W.Hackman; institutionCode: MZHF

f. country: Finland; stateProvince: Alandia; municipality: Lemland; locality: Norrhamn; decimalLatitude: 60.073; decimalLongitude: 20.001; geodeticDatum: WGS84; eventDate: 1943-7-24/7-24; individualCount: 1; sex: male; recordedBy: A.Nordman; identifiedBy: W.Hackman; institutionCode: MZHF

g. country: Finland; stateProvince: Nylandia; municipality: Espoo; locality: Westend; decimalLatitude: 60.159; decimalLongitude: 24.799; geodeticDatum: WGS84; eventDate: 1968-7-14/7-14; individualCount: 1; sex: male; recordedBy: W.Hackman; identifiedBy: W.Hackman; institutionCode: MZHF

h. country: Finland; stateProvince: Regio aboënsis; municipality: Karjalohja; locality: Karkali_South; decimalLatitude: 60.238; decimalLongitude: 23.784; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-6-1/6-14; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

Distribution

A rare European species. Besides Britain the species was recorded only from Northern Europe: Finland (Lundström 1909, as *Neoempheria nigriceps*), Norway (Økland 1999), Sweden (Kjaerandsen et al. 2007), Estonia (Lackschewitz 1937) and NW Russia (Ostroverkhova and Stackelberg 1988, Chandler 2004). However, that Russian ("Northwest") record given by Ostroverkhova & Stackelberg (Ostroverkhova and Stackelberg 1988) may actually refer to the Estonian record given by Lackschewitz (Lackschewitz 1937). A few old Finnish records are mainly from southern Finland; from Åland archipelago and a few mainland sites not far from the Baltic coast (Lohja [holotype, Lundström 1909] Karjalohja, Helsinki, Espoo, Pietarsaari). The new Finnish record is from a much more northern area, SW Lapland (mid boreal vegetation zone). Reported here for the first time from the Republic of Karelia.

Ecology

Although the species is very rarely caught, the available records suggest that the species could be restricted to pristine forests. New findings from Russian Karelia are from herb-rich spruce dominated forest on the SE shore of Lake Ladoga. The sampling locality in SW Lapland (Ylitornio) is a spruce mire dominated by *Vaccinium vitis-idaea* on the ground layer, adult specimens were collected around a fallen spruce. Larval microhabitats are not perfectly known. Rearing records are available only from Norway where Økland (Økland 1999) collected *E. nigriceps* with eclector traps over ground vegetation in three different substrates: (1) patch of Eu-Piceetum ground vegetation, (2) wet moss carpet on steep rock in Eu-Piceetum woodland, (3) mineral soil exposed by windfelling of *Picea abies*.

Conservation

Red-listed in Finland (EN, Penttinen et al. 2010).

Monoclona silvatica Zaitzev, 1983*

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=139439

Material

a. country: Finland; stateProvince: Karelia ladogensis; municipality: Parikkala; locality: Kasinniemi; decimalLatitude: 61.565; decimalLongitude: 29.558; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008-7-22/9-1; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

Distribution

Palaearctic. The species is known from the Far East and European parts of Russia (Zaitzev 1994), Central Europe (Chandler 2004) and Norway (Kjaerandsen and Jordal 2007). New for Finland, Finnish sampling sites lie in the south boreal zone.

Ecology

Larvae are associated with wood-decaying fungi (Zaitzev 1994). Finnish collecting sites are herb-rich forests with high amounts of decaying deciduous trees and an old-growth boreal forest.

Conservation

Red-listed in Norway (DD, Anonymous 2010).

Phthinia zaitzevi Plassmann, 1990**

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=139409

Material

a. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Kartesh, biological station; decimalLatitude: 66.337; decimalLongitude: 33.652; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 1996-7-30/8-1; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

Distribution

European. Extremely rare species (Fig. 9) which was known from the type locality in Sweden (Plassmann 1990) and later reported from Czech republic (Chandler 2004). However, the record from Czech republic is erroneous (Ševčík and Košel 2009). New to Russia and the Republic of Karelia.

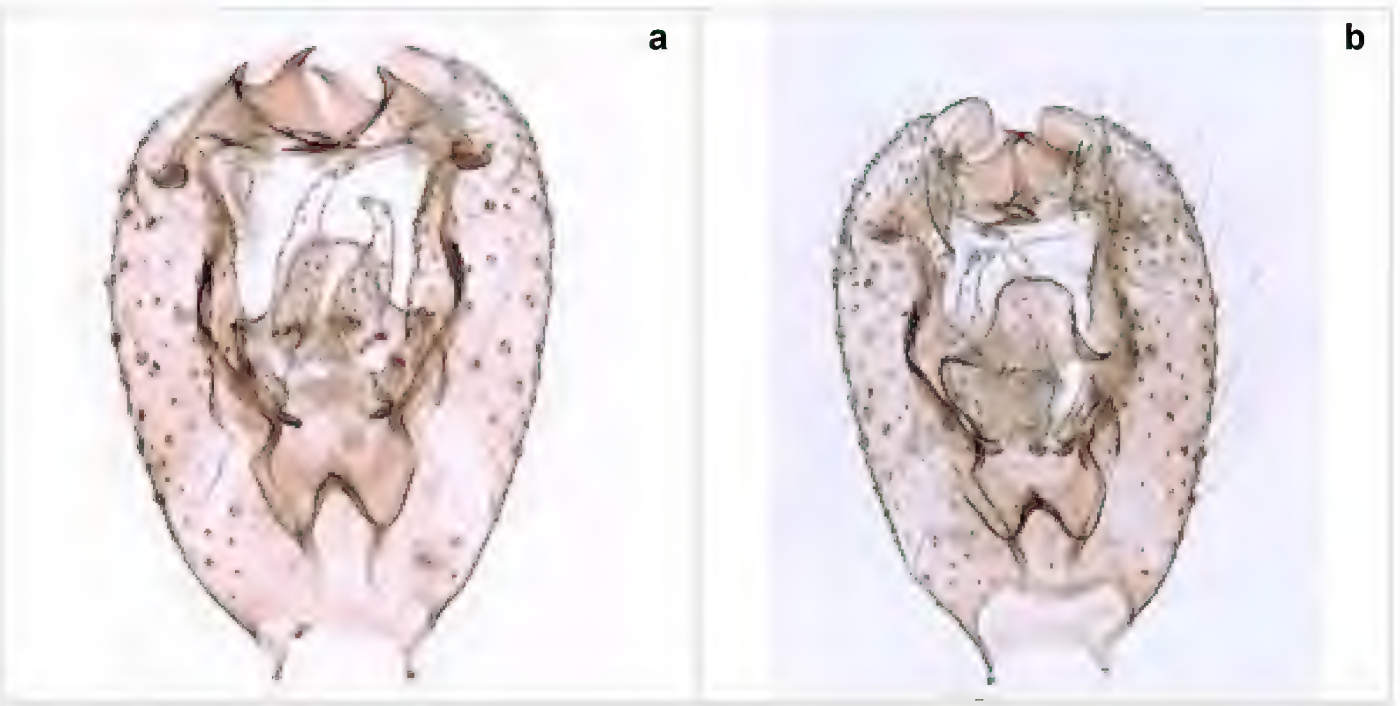

Figure 9.

Phthinia zaitzevi Plassmann, male specimen collected from Russian Karelia.

a: Male hypopygium, dorsal view.
b: Male hypopygium, ventral view.

Ecology

The Karelian specimen was collected in *Vaccinium myrtillus* type spruce dominated forest. Immature stages are unknown. Generally, *Phthinia* larvae develop in webs on the surface of fungal mycelium and moulds in rotten wood. The larvae pupate in silky cocoon (Plachter 1979).

Notes

Plassmann's original figure of male genitalia is sketchy, however the study of the holotype (Sweden, Abisko) confirmed identity of Karelian and Swedish speciemens.

Sciophila bicuspidata Zaitzev, 1982*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=139336

Materials

a. country: Finland; stateProvince: Ostrobothnia borealis pars borealis; verbatimLocality: Tornio, Rakanjänkkä; decimalLatitude: 65.890; decimalLongitude: 24.317; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-4/7-2; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0222; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

b. country: Finland; stateProvince: Ostrobothnia borealis pars borealis; verbatimLocality: Tornio, Rakanjänkkä; decimalLatitude: 65.890; decimalLongitude: 24.317; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-2/8-6; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0225; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

Distribution

Holarctic. Described from North America, based on material collected from Canada (Quebec, British Columbia) and USA (Alaska) (Zaitzev 1982b), also recently found from Greenland (G. Varkonyi, pers. comm.). In Europe the species has been found only in Norway (Økland and Zaitzev 1997) and Russian Karelia (Polevoi 2001a). New for Finland.

Ecology

The collecting site is a calcareous, open spring fen, ca. 100 m from a forest edge. Immature stages are unknown.

Sciophila caesarea Chandler, 2001*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=139338

Materials

a. genus: Sciophila; specificEpithet: caesarea; scientificNameAuthorship: Chandler, 2001; stateProvince: Lapponia inarensis; municipality: Utsjoki; locality: Galddasjohka; decimalLatitude: 69.861; decimalLongitude: 27.809; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-7-19/8-27; habitat: stream valley in fell area; individualCount: 1; sex: male; recordedBy: J.Salmela; identifiedBy: J.Jakovlev; institutionCode: JJH

b. genus: Sciophila; specificEpithet: caesarea; scientificNameAuthorship: Chandler, 2001; stateProvince: Lapponia enontekiensis; municipality: Enontekiö; locality: Kilpisjärvi_Saana_South_2; decimalLatitude: 69.035; decimalLongitude: 20.839; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-8-1/8-15; habitat: subarctic mountain birch forest; individualCount: 1; sex: male; recordedBy: J.Jakovlev; J.Penttinen; identifiedBy: J.Jakovlev; institutionCode: JJH

c. genus: Sciophila; specificEpithet: caesarea; scientificNameAuthorship: Chandler, 2001; stateProvince: Satakunta; municipality: Ikaalinen; locality: Multinharju; decimalLatitude: 61.907; decimalLongitude: 23.399; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-7-2/8-24; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: M.Jaschhof; C.Jaschhof; identifiedBy: J.Jakovlev; institutionCode: JJH

Distribution

European. Described from Great Britain (Chandler 2001), later found from southern Sweden (Kjaerandsen et al. 2007). New for Finland. Record from Czech republic in Fauna Europaea (Chandler 2004) is erroneous (J. Ševčík, pers.comm.).

Ecology

Finnish collecting sites are a luxurious old-growth coniferous forest (Ikaalinen) in central Finland, a mountain birch forest with rich vegetation (Saana) and a subarctic

stream valley surrounded by a strip of mountain birch forest (Galddasjohka). Immature stages are unknown.

Sciophila fuliginosa Holmgren, 1883

- Fauna europaea http://www.faunaeur.org/full_results.php?id=139349

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja; decimalLatitude: 67.846; decimalLongitude: 29.471; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-14/7-10; individualCount: 2; sex: male; catalogNumber: MYCE-JS-2013-0098; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

b. country: Finland; stateProvince: Lapponia enontekiensis; verbatimLocality: Kilpisjärvi, Saana; verbatimElevation: 560 m; decimalLatitude: 69.035; decimalLongitude: 20.839; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-8-1/15; individualCount: 1; sex: male; recordedBy: J. Jakovlev; J. Penttinen; identifiedBy: J. Jakovlev; institutionCode: JJH

Distribution

The species appears to have an Arctic distribution. Described from Novaya Zemlya archipelago, Matotschkin Sharr (Holmgren 1883), later found in the Russian Arctic, Taimyr Peninsula (Lundström 1915), in Alaska and northern Canada (Zaitzev 1982b). In Fennoscandia only known from Finland (Hackman 1980, Kjaerandsen 2012).

Ecology

Finnish collecting sites are a mountain birch forest with herb-rich vegetation (Saana fell) and a luxuriant headwater stream surrounded by an old-growth coniferous forest with a mixture of deciduous trees (Törmäoja). Immature stages are unknown.

Sciophila salassea Matile, 1983*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=139381

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja; decimalLatitude: 67.846; decimalLongitude: 29.471; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-14/7-10; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0103; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

b. country: Finland; stateProvince: Savonia borealis; verbatimLocality: Savonranta, Kakonsalo; decimalLatitude: 62.250; decimalLongitude: 28.877; geodeticDatum: WGS84; samplingProtocol: eclector trap on aspen log bearing bracket fungus *Phellinus tremulae*; eventDate: 2007-4-28/6-3; individualCount: 1; sex: male; recordedBy: J. Jakovlev; J. Penttinen; identifiedBy: J. Jakovlev; institutionCode: JJH

c. country: Finland; stateProvince: Regio kuusamoensis; verbatimLocality: Salla, Kuntasjoki, Värriö Strict Nature Reserve; verbatimElevation: 320 m; decimalLatitude: 67.749; decimalLongitude: 29.617; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2013; verbatimEventDate: 2013-6-4/29; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: DIPT-JS-2014-0029; recordedBy: J. Salmela; T. Hietajärvi; identifiedBy: J. Salmela; institutionCode: JES

Distribution

European, possibly boreal–mountainous. The species was described from the Italian Alps (Matile 1983) and later recorded from Great Britain (Chandler 2006), and from Fennoscandia: Norway (Økland and Zaitzev 1997), Sweden (Kjaerandsen et al. 2007) and Russian Karelia (Humala and Polevoi 2008, Polevoi 2000). The species was included in the Finnish Red List (Penttinen et al. 2010), but is here formally reported as a new species for Finland.

Ecology

Collecting site in Törmäoja is a stream valley with seepages and young deciduous forest. Slopes nearby are coniferous stands dominated by *Vaccinium vitis-idaea* and *Pinus sylvestris.* Collecting site in Värriö is a headwater stream surrounded by pristine spruce and pine forest. The male specimen from Savonranta was collected from a decaying aspen (*Populus tremula*) tree by using an eclector trap.

Conservation

The species was red-listed in Finland (EN, Penttinen et al. 2010) based on the single record from Savonranta. *Sciophila salassea* is also red-listed in Norway (NT), so far observed from pristine spruce forests (Anonymous 2010, Gammelmo et al. 2010)

Speolepta leptogaster (Winnetrz, 1863)

- Fauna europaea http://www.faunaeur.org/full_results.php?id=139327

Materials

a. country: Finland; stateProvince: Savonia borealis; verbatimLocality: Maaninka, Tuovilanlahti; decimalLatitude: 63.23; decimalLongitude: 27.09; geodeticDatum: WGS84; eventDate: 1865-7-16; individualCount: 1; recordedBy: Palmen, J.; institutionCode: MZHF

b. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Muonio, Pallasjärvi; decimalLatitude: 68.018; decimalLongitude: 24.153; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-6-18/7-14; individualCount: 1; sex: male; recordedBy: J. Jakovlev; J. Penttinen

c. country: Finland; stateProvince: Tavastia australis; verbatimLocality: Kangasala, Suorama; decimalLatitude: 61.463; decimalLongitude: 23.995; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-6-15/8-15; habitat: dry/semi-dry herb-rich forest, with *Tilia* and *Populus tremula*; individualCount: 1; recordedBy: J. Penttinen

d. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja; decimalLatitude: 67.846; decimalLongitude: 29.471; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-14/7-10; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2012-0031; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

Distribution

European. Widely distributed in Europe (Chandler 2004), also in the Nordic Region, but records from Finland are very scanty. Only one recent record from Murmansk Province in NW Russia (Polevoi 2010).

Ecology

The species lives as larvae in caves and rock crevices, on the walls, in slimy tubes, pupae are free hanging (Madwar 1937, Ševčík et al. 2012).

Boletina atridentata Polevoi & Hedmark, 2004*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140794

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-10/8-16; habitat: headwater stream, seminatural boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0127; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

b. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0052; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

c. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Akaharamanvuoma; decimalLatitude: 67.593; decimalLongitude: 25.302; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-8-2/9-3; habitat: intermediate rich flark fen; individualCount: 1; sex: male; catalogNumber: MYCE-NV-2013-0015; recordedBy: J. Salmela; identifiedBy: N. Vartija; institutionCode: JES

d. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Vasanvuoma; decimalLatitude: 67.582; decimalLongitude: 25.203; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-8-2/9-3; habitat: rich fen; individualCount: 1; sex: male; catalogNumber: MYCE-NV-2013-0096; recordedBy: J. Salmela; identifiedBy: N. Vartija; institutionCode: JES

Distribution

Palaearctic. *Boletina atridentata* (Fig. 10) was described from North Sweden (Lule Lapmark) and Russian Karelia (Paanajärvi) (Polevoi and Hedmark 2004). Other Swedish records are also from Lule Lapmark (Kjaerandsen et al. 2007) and additional records reported from NW Russia (Humala and Polevoi 2008, Polevoi 2010). There is also an unpublished record from West Siberia (E.Subbotina in litt.). Finnish localities are situated in central and eastern Lapland, north boreal zone.

Figure 10.

Boletina atridentata Polevoi & Hedmark, male specimen collected from Finland, Savukoski (northeastern Lapland).

Ecology

Finnish collecting sites are a headwater stream with luxuriant riparian vegetation, surrounded by coniferous forest (Joutenoja), and aapamires (sites in Kittilä). Immature stages are unknown.

Boletina borealis Zetterstedt, 1852

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140802

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kolari; decimalLatitude: 67.210; decimalLongitude: 23.799; geodeticDatum: WGS84; samplingProtocol: sweep net; eventDate: 2006-6-14; individualCount: 1; sex: male; recordedBy: J. Jakovlev; identifiedBy: J. Jakovlev

b. country: Finland; stateProvince: Lapponia enontekiensis; verbatimLocality: Enontekiö, Kilpisjärvi, Saana; decimalLatitude: 69.004; decimalLongitude: 20.817; geodeticDatum: WGS84; samplingProtocol: sweep net; eventDate: 2006-6-21; individualCount: 1; sex: male; recordedBy: J. Jakovlev; identifiedBy: J. Jakovlev

c. country: Finland; stateProvince: Lapponia inarensis; verbatimLocality: Utsjoki, Kaldoaivi, Galddasjohka; decimalLatitude: 69.860; decimalLongitude: 27.809; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-7-15/8-27; individualCount: 5; sex: male; recordedBy: J. Salmela; identifiedBy: J. Jakovlev

d. country: Finland; stateProvince: Ostrobothnia borealis pars borealis; verbatimLocality: Tornio, Rakanjänkkä; decimalLatitude: 65.890; decimalLongitude: 24.317; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-2/7-2; individualCount: 2; sex: male; recordedBy: J. Salmela; identifiedBy: J. Salmela

e. country: Finland; stateProvince: Ostrobothnia borealis pars borealis; verbatimLocality: Tervola, Ruuttulammi; decimalLatitude: 66.207; decimalLongitude: 24.898; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-4/7-2; individualCount: 7; sex: male; recordedBy: J. Salmela; identifiedBy: J. Salmela

f. country: Finland; stateProvince: Ostrobothnia borealis pars borealis; verbatimLocality: Yli-Tornio, Tuorerommas; decimalLatitude: 66.476; decimalLongitude: 24.756; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-4/7-2; individualCount: 21; sex: male; recordedBy: J. Salmela; identifiedBy: J. Salmela

g. country: Finland; stateProvince: Ostrobothnia borealis pars borealis; verbatimLocality: Rovaniemi, Aitakuru; decimalLatitude: 66.938; decimalLongitude: 25.935; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-5/7-4; individualCount: 5; sex: male; recordedBy: J. Salmela; identifiedBy: J. Salmela

h. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Sodankylä, Pomokaira, Kaita-aapa; decimalLatitude: 67.845; decimalLongitude: 26.553; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-5/7-4; individualCount: 3; sex: male; catalogNumber: MYCE-JS-2013-0002; recordedBy: J. Salmela; identifiedBy: J. Salmela

i. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Sodankylä, Pomokaira, Tenniöaapa; decimalLatitude: 67.867; decimalLongitude: 26.449; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-6/7-7; individualCount: 9; sex: male; recordedBy: J. Salmela; identifiedBy: J. Salmela

j. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Sodankylä, Viiankiaapa, Sakatti; decimalLatitude: 67.544; decimalLongitude: 26.760; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-5/7-6; individualCount: 2; sex: male; recordedBy: J. Salmela; identifiedBy: J. Salmela

k. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Sodankylä, Heinäaapa; decimalLatitude: 67.596; decimalLongitude: 26.883; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-6/7-6; individualCount: 9; sex: male; catalogNumber: MYCE-JS-2012-0085; recordedBy: J. Salmela; identifiedBy: J. Salmela

l. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-14/7-10; individualCount: 71; sex: male; catalogNumber: MYCE-JS-2013-0186; recordedBy: J. Salmela; identifiedBy: J. Salmela

m. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja; decimalLatitude: 67.846; decimalLongitude: 29.471; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-14/7-10; individualCount: 65; sex: male; recordedBy: J. Salmela; identifiedBy: J. Salmela

n. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Sodankylä, Paistipuolet; decimalLatitude: 67.836; decimalLongitude: 26.216; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-6-1/29;

individualCount: 4; sex: male; catalogNumber: MYCE-NV-2013-0042; recordedBy: J. Salmela; identifiedBy: J. Salmela

o. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Repsuvuoma; decimalLatitude: 67.604; decimalLongitude: 24.967; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-6-1/26; individualCount: 1; sex: male; recordedBy: J. Salmela; identifiedBy: N. Vartija

p. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Silmäsvuoma; decimalLatitude: 67.582; decimalLongitude: 25.543; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-5-31/6-25; individualCount: 2; sex: male; recordedBy: J. Salmela; identifiedBy: N. Vartija

q. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Kielisenpalo; decimalLatitude: 68.020; decimalLongitude: 25.063; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-6-26/8-2; individualCount: 4; sex: male; recordedBy: J. Salmela; identifiedBy: N. Vartija

r. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Vuotsonperänjänkä; decimalLatitude: 67.616; decimalLongitude: 25.449; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-5-31/6-26; individualCount: 12; sex: male; recordedBy: J. Salmela; identifiedBy: N. Vartija

s. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Vielmakoskenpalo; decimalLatitude: 68.008; decimalLongitude: 25.046; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-6-26/7-24; individualCount: 5; sex: male; recordedBy: J. Salmela; identifiedBy: N. Vartija

t. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä,Tarpomapää; decimalLatitude: 67.820; decimalLongitude: 25.919; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-6-1/29; individualCount: 6; sex: male; recordedBy: J. Salmela; identifiedBy: N. Vartija

u. country: Finland; stateProvince: Tavastia australis; municipality: Hattula; locality: Hattula; decimalLatitude: 61.058; decimalLongitude: 24.367; geodeticDatum: WGS84; eventDate: 1905; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: Wegelius; identifiedBy: C.Lundström; institutionCode: MZHF

v. country: Finland; stateProvince: Lapponia enontekiensis; municipality: Enontekiö; locality: Palojoensuu; decimalLatitude: 68.285; decimalLongitude: 23.095; geodeticDatum: WGS84; eventDate: 1911-7-11/7-11; habitat: subarctic; individualCount: 1; sex: male; recordedBy: R.Frey; identifiedBy: C.Lundström; institutionCode: MZHF

w. country: Finland; stateProvince: Tavastia borealis; municipality: Rautalampi; locality: Kalajavuori; decimalLatitude: 62.578; decimalLongitude: 26.698; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-5-3/6-6; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

x. country: Finland; stateProvince: Lapponia enontekiensis; municipality: Enontekiö; locality: Kilpisjärvi_Saana_North_4; decimalLatitude: 69.045; decimalLongitude: 20.808; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-8-1/8-15; habitat: subarctic; individualCount: 1; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev

y. country: Finland; stateProvince: Lapponia enontekiensis; municipality: Enontekiö; locality: Kilpisjärvi_Saana_North_5; decimalLatitude: 69.045; decimalLongitude: 20.809; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2006-6-21/6-21; habitat: Subarctic; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

z. country: Finland; stateProvince: Lapponia enontekiensis; municipality: Enontekiö; locality: Kilpisjärvi_Saana_South_2; decimalLatitude: 69.035; decimalLongitude: 20.839; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-8-15/8-31; startDayOfYear: 15; endDayOfYear: 8; year: 31; month: 8; day: 2006; habitat: subarctic; individualCount: 1; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev

aa. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; municipality: Kittilä; locality: Pallas-Yllästunturi National Park Pallas_3; decimalLatitude: 68.038; decimalLongitude: 24.136; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-8-15/9-15; startDayOfYear: 15; endDayOfYear: 8; year: 15; month: 9; day: 2006; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev

ab. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; municipality: Kolari; locality: Kolari_1; decimalLatitude: 67.209; decimalLongitude: 23.779; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2006-6-14/6-14; startDayOfYear: 14; endDayOfYear: 6; year: 14; month: 6; day: 2006; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

ac. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; municipality: Kolari; locality: Kolari_2; decimalLatitude: 67.280; decimalLongitude: 23.880; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-6-14/6-14; startDayOfYear: 14; endDayOfYear: 6; year: 14; month: 6; day: 2006; habitat: burnt forest; individualCount: 1; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev

ad. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; municipality: Kolari; locality: Kolari_2; decimalLatitude: 67.280; decimalLongitude: 23.880; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-7-15/8-15; startDayOfYear: 15; endDayOfYear: 7; year: 15; month: 8; day: 2006; habitat: burnt forest; individualCount: 1; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev

ae. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; municipality: Kolari; locality: Kolari_3; decimalLatitude: 67.280; decimalLongitude: 23.881; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-7-15/8-15; startDayOfYear: 15; endDayOfYear: 7; year: 15; month: 8; day: 2006; habitat: old-growth forest, Myrtillus type; individualCount: 3; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev

af. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; municipality: Muonio; locality: Pallas-Yllästunturi National Park; decimalLatitude: 67.592; decimalLongitude: 24.188; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-7-15/8-15; startDayOfYear: 15; endDayOfYear: 7; year: 15; month: 8; day: 2006; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev

ag. country: Finland; stateProvince: Ostrobothnia borealis pars borealis; municipality: Rovaniemi; locality: Pisavaara; decimalLatitude: 66.279; decimalLongitude: 25.029; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2006-6-13/6-13; startDayOfYear: 13; endDayOfYear: 6; year: 13; month: 6; day: 2006; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev

ah. country: Finland; stateProvince: Regio kuusamoënsis; municipality: Kuusamo; locality: Oulanka_1; decimalLatitude: 66.365; decimalLongitude: 29.315; geodeticDatum: WGS84;

samplingProtocol: Malaise trap; eventDate: 2007-5-25/6-30; startDayOfYear: 25; endDayOfYear: 5; year: 30; month: 6; day: 2007; habitat: old-growth forest, Myrtillus type; individualCount: 5; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev

ai. country: Finland; stateProvince: Lapponia inarensis; municipality: Utsjoki; locality: Galddasjohka; decimalLatitude: 69.860; decimalLongitude: 27.770; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-6-15/7-19; startDayOfYear: 15; endDayOfYear: 6; year: 19; month: 7; day: 2007; habitat: subarctic; individualCount: 1; sex: male; recordedBy: J.Salmela; identifiedBy: J.Jakovlev; institutionCode: JJH

aj. country: Finland; stateProvince: Lapponia inarensis; municipality: Utsjoki; locality: Galddasjohka; decimalLatitude: 69.861; decimalLongitude: 27.803; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-6-15/7-19; startDayOfYear: 15; endDayOfYear: 6; year: 19; month: 7; day: 2007; habitat: subarctic; individualCount: 1; sex: male; recordedBy: J.Salmela; identifiedBy: J.Jakovlev; institutionCode: JJH

ak. country: Finland; stateProvince: Lapponia inarensis; municipality: Utsjoki; locality: Galddasjohka; decimalLatitude: 69.861; decimalLongitude: 27.790; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-7-19/8-27; startDayOfYear: 19; endDayOfYear: 7; year: 27; month: 8; day: 2007; habitat: subarctic; individualCount: 1; sex: male; recordedBy: J.Salmela; identifiedBy: J.Jakovlev; institutionCode: JJH

al. country: Finland; stateProvince: Lapponia inarensis; municipality: Utsjoki; locality: Galddasjohka; decimalLatitude: 69.861; decimalLongitude: 27.803; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-7-19/8-27; startDayOfYear: 19; endDayOfYear: 7; year: 27; month: 8; day: 2007; habitat: subarctic; individualCount: 1; sex: male; recordedBy: J.Salmela; identifiedBy: J.Jakovlev; institutionCode: JJH

Distribution

Palaearctic. *Boletina borealis* (Fig. 11a) is formely recorded in Europe from the northern parts of Russia (Novaya Zemlya, Karelia, Zaitzev 1994, Polevoi 2013a), northern Sweden (provinces JÄ, ÅS,LY,LU, Kjaerandsen et al. 2007), Norway (Finnmark, Søli and Rindal 2012), and also from mountainous areas of Austria, Germany, Italy and Poland (Plassmann 1984, Chandler 2004), indicating a boreal–mountainous to arctic distribution.

Ecology

The species is rather numerous in Malaise trap cathces collected from Finnish Lapland in June, less so during July. One of the most common fungus gnats in riparian woodlands and aapamires. Larval ecology is unknown.

Taxon discussion

Boletina borealis is very close to *B. intermedia* Lundström. These two taxa can reliably be distinguished if internal structures, especially parameres, of the male hypopygium are studied (see Fig. 11). In *B. borealis*, apices of parameres are thin and curved (Fig. 11a), whereas in *B. intermedia* these are stout and spear-shaped (Fig. 11b). It is likely that *B. intermedia* has been overlooked in faunistic surveys, but the material studied here suggests that *B. borealis* is rather common in North Finland, whereas *B.*

intermedia is locally less abundant and has a smaller area of occupancy. Another species, perhaps an undescribed species close to *B. hymenophalloides* Sasakawa & Kimura, 1974, is superficially similar to *B. borealis* and *B. intermedia*. However, aedeagus of this species is surrounded by a weakly sclerotized membrane and additional differences are present in the sturucture of sternal submedian appendages and parameres. This species, collected from NE Lapland, will be described elsewhere.

Figure 11.

Boletina borealis Zetterstedt (a) and *Boletina intermedia* Lundström (b), male specimens collected from Finnish Lapland.

a: *Boletina borealis*, 9th tergite (left, dorsal viewl) and aedeagus and parameres (right, lateral view). Note the curved, long and thin apices of the parameres.

b: *Boletina intermedia,* parameres, aedeagus and 9th tergite (all in dorsal view). Note the spear-shaped, stout parameres.

Boletina cincticornis (Walker, 1848)

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140805

Materials

a. stateProvince: Lapponia kemensis pars occidentalis; municipality: Muonio; locality: Pallastunturi; decimalLatitude: 68.072; decimalLongitude: 24.068; geodeticDatum: WGS84; eventDate: 1900-6-28/6-28; individualCount: 1; sex: male; recordedBy: R.Frey; identifiedBy: C.Lundström; institutionCode: MZHF

b. stateProvince: Karelia borealis; municipality: Kontiolahti; locality: unknown_locality; samplingProtocol: sweep netting ?; eventDate: 1911; individualCount: 1; sex: male; recordedBy: Grönvik; identifiedBy: C.Lundström; institutionCode: MZHF

c. stateProvince: Lapponia kemensis pars occidentalis; municipality: Muonio; locality: Pallastunturi; decimalLatitude: 68.072; decimalLongitude: 24.068; geodeticDatum: WGS84; eventDate: 1911-6-13/6-13; individualCount: 1; sex: male; recordedBy: R.Frey; identifiedBy: C.Lundström; institutionCode: MZHF

d. stateProvince: Karelia borealis; municipality: Pielisjärvi; locality: 4km SE Koli village; decimalLatitude: 63.050; decimalLongitude: 29.496; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2004-6-10/6-10; habitat: meadow and dry hay at birch forest edge; individualCount: 1; sex: male; recordedBy: M.Jaschhof and C.Jaschhof; identifiedBy: J.Jakovlev; institutionCode: JJH

e. stateProvince: Tavastia borealis; municipality: Jyväskylä; locality: Huhtala; decimalLatitude: 62.205; decimalLongitude: 25.683; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2005; habitat: Clear-cut; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

f. stateProvince: Lapponia enontekiensis; municipality: Enontekiö; locality: Kilpisjärvi_Saana_North_4; decimalLatitude: 69.045; decimalLongitude: 20.808; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-8-1/8-15; habitat: subarctic; individualCount: 1; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev

g. stateProvince: Lapponia kemensis pars occidentalis; municipality: Kittilä; locality: Pallas-Yllästunturi National Park Pallas_1; decimalLatitude: 68.024; decimalLongitude: 24.150; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-7-15/8-14; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev

h. stateProvince: Lapponia inarensis; municipality: Utsjoki; locality: Galddasjohka; decimalLatitude: 69.860; decimalLongitude: 27.770; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-7-19/8-27; habitat: subarctic; individualCount: 1; sex: male; recordedBy: J.Salmela; identifiedBy: J.Jakovlev; institutionCode: JJH

i. stateProvince: Lapponia inarensis; municipality: Utsjoki; locality: Galddasjohka; decimalLatitude: 69.860; decimalLongitude: 27.808; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-6-15/7-19; habitat: subarctic; individualCount: 1; sex: male; recordedBy: J.Salmela; identifiedBy: J.Jakovlev; institutionCode: JJH

j. stateProvince: Lapponia inarensis; municipality: Utsjoki; locality: Galddasjohka; decimalLatitude: 69.861; decimalLongitude: 27.790; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-7-19/8-27; habitat: subarctic; individualCount: 1; sex: male; recordedBy: J.Salmela; identifiedBy: J.Jakovlev; institutionCode: JJH

k. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-10/8-16; habitat: Headwater stream, boreal forest; individualCount: 1; sex: male; recordedBy: Jukka Salmela; identifiedBy: J. Salmela

l. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja; decimalLatitude: 67.846; decimalLongitude: 29.471; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-10/8-16; habitat: Headwater stream, boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0131; recordedBy: Jukka Salmela; identifiedBy: J. Salmela; institutionCode: JES

m. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Tarpomapää; decimalLatitude: 67.820; decimalLongitude: 25.919; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-6-1/29; habitat: Spring brook, boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-NV-2013-0259; recordedBy: Jukka Salmela; identifiedBy: J. Salmela; institutionCode: JES

n. country: Finland; stateProvince: Regio kuusamoensis; verbatimLocality: Salla, Kuntasjoki, Värriö Strict Nature Reserve; verbatimElevation: 320 m; decimalLatitude: 67.749; decimalLongitude: 29.617; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2013; verbatimEventDate: 2013-6-4/29; habitat: headwater stream, old-growth

boreal forest; individualCount: 1; sex: male; recordedBy: J. Salmela; T. Hietajärvi; identifiedBy: J. Salmela

Distribution

Palaearctic. Widely distributed in Europe (Chandler 2004). In the Nordic Region recorded from Norway (Gammelmo and Søli 2006), northern and central Sweden (Kjaerandsen et al. 2007), and Finland (Lundström 1912a, as *B. winnertzii*). Most of the Finnish records are from the northern part of the country.

Ecology

Recently collected Finnish material is from riparian forests, boreal forests and mountain birch forests. Immature stages are unknown.

Boletina dubia (Meigen, 1804)

- http://www.faunaeur.org/full_results.php?id=140816

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Sodankylä, Heinäaapa; decimalLatitude: 67.596; decimalLongitude: 26.883; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-10/9-19; habitat: rich srping fen; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2012-0022; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

b. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Sodankylä, Heinäaapa; decimalLatitude: 67.596; decimalLongitude: 26.883; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-6/7-6; habitat: rich srping fen; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2012-0088; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

c. country: Finland; stateProvince: Ostrobotnia borealis pars borealis; verbatimLocality: Tornio, Rakanjänkkä; decimalLatitude: 65.889; decimalLongitude: 24.317; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-6/9-26; habitat: rich srping fen; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2012-0034; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

d. country: Finland; stateProvince: Regio kuusamoensis; verbatimLocality: Salla, Iso Pyhätunturi; decimalLatitude: 66.776; decimalLongitude: 28.810; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2013-8-8/9-19; habitat: intermediate rich sloping fen; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0359; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

e. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Silmäsvuoma; decimalLatitude: 67.582; decimalLongitude: 25.543; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-5-31/6-25; habitat: rich fen; individualCount: 1; sex: male; catalogNumber: MYCE-NV-2013-0062; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

f. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Kielisenpalo; decimalLatitude: 68.020; decimalLongitude: 25.063; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-8-1/31; habitat: rich spring fen;

individualCount: 1; sex: male; catalogNumber: MYCE-NV-2013-0085; recordedBy: J. Salmela; identifiedBy: N. Vartija; institutionCode: JES

g. country: Finland; stateProvince: Regio aboensis; verbatimLocality: Turku, Pomponrahka; decimalLatitude: 60.509; decimalLongitude: 22.249; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2011-5-3/6-1; habitat: rich fen; individualCount: 1; sex: male; recordedBy: J. Salmela; identifiedBy: N. Vartija

h. country: Finland; stateProvince: Nylandia; verbatimLocality: Espoo; decimalLatitude: 60.19; decimalLongitude: 24.64; geodeticDatum: WGS84; eventDate: 1906; individualCount: 1; sex: male; recordedBy: R. Frey; identifiedBy: J. Jakovlev; institutionCode: MZHF

i. country: Finland; stateProvince: Lapponia inarensis; verbatimLocality: Utsjoki, Galddasjohka; decimalLatitude: 69.860; decimalLongitude: 27.809; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-7-19/8-27; habitat: headwater stream; individualCount: 1; sex: male; recordedBy: J. Salmela; identifiedBy: J. Jakovlev; institutionCode: JJH

Distribution

European. Widely distributed in Europe (Chandler 2004). In the Nordic Region recorded from Norway (Gammelmo and Søli 2006), Sweden (Kjaerandsen et al. 2007), Iceland (Kjaerandsen et al. 2007a) and Finland (Lundström 1912b, as *B. inermis*, holotype male from Nylandia, Helsinki). Wide range in Finland, including the hemiboreal, boreal and subarctic zones.

Ecology

Boletina dubia has been reared from liverworts (Cheetham 1920). New Finnish records are mainly from rich fens, and there are single records from a *Sphagnum* dominated sloping fen and from a headwater stream with rich riparian vegetation.

Conservation

Due to the scarcity of records until the 2010 Red List assessment, the species was considered to be rather rare in Finland. However, the species was obviously overlooked due to its mire-dwelling ecology. *Boletina dubia* is currently red-listed in Finland (NT, Penttinen et al. 2010), but the new data provided here indicate that the species is actually rather common in suitable habitats in the middle and north boreal mires.

Boletina dispectoides Jakovlev & Penttinen, 2007**

- Catalogue of Life http://www.catalogueoflife.org/annual-checklist/2013/details/species/id/8765129

Material

a. genus: Boletina; specificEpithet: dispectoides; scientificNameAuthorship: Jakovlev & Penttinen, 2007; country: Russia; stateProvince: Republic Karelia; verbatimLocality:

Kivach Nature Reserve; decimalLatitude: 62.272; decimalLongitude: 33.988; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 1990-9-18/10-1; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

Distribution

European. So far was known only from the type locality in Finland (Jakovlev and Penttinen 2007) and from the Italian Alps (Kurina 2008) but might be overlooked in the Fennoscandian region. New to Russia and Karelia.

Ecology

The Karelian specimen was collected in herb-rich aspen dominated forest. Immature stages are unknown.

Boletina groenlandica Staeger, 1845

- http://www.faunaeur.org/full_results.php?id=140828

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Sodankylä, Heinäaapa; decimalLatitude: 67.596; decimalLongitude: 26.883; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-6/7-6; habitat: rich spring fen; individualCount: 2; sex: male; catalogNumber: MYCE-JS-2012-0082; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

b. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja; decimalLatitude: 67.846; decimalLongitude: 29.471; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-14/7-10; habitat: headwater stream; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0135; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

c. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Sodankylä, Kaita-aapa; decimalLatitude: 67.845; decimalLongitude: 26.553; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-5/7-3; habitat: aapamire, intermediate rich flark fen; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0215; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

d. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Sodankylä, Pomokaira, Paistipuolet; decimalLatitude: 67.836; decimalLongitude: 26.216; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-6-1/29; habitat: poor sloping fen; individualCount: 1; sex: male; catalogNumber: MYCE-NV-2013-0041; recordedBy: J. Salmela; identifiedBy: N. Vartija; J. Salmela; institutionCode: JES

e. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Sodankylä, Pomokaira, Aittakumpu S; decimalLatitude: 67.822; decimalLongitude: 26.027; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-6-1/29; habitat: rich fen; individualCount: 1; sex: male; catalogNumber: MYCE-NV-2013-0104; recordedBy: J. Salmela; identifiedBy: N. Vartija; J. Salmela; institutionCode: JES

f. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Sodankylä, Pomokaira, Tarpomapää E; decimalLatitude: 67.831; decimalLongitude: 25.993; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-6-1/29; habitat: intermediate rich flark fen; individualCount: 11; sex: male; catalogNumber: MYCE-NV-2013-0139; recordedBy: J. Salmela; identifiedBy: N. Vartija; J. Salmela; institutionCode: JES

g. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Sodankylä, Pomokaira, Paistipuolet NE; decimalLatitude: 67.834; decimalLongitude: 26.270; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-6-1/29; habitat: intermediate rich spring fen; individualCount: 20; sex: male; catalogNumber: MYCE-NV-2013-0194; recordedBy: J. Salmela; identifiedBy: N. Vartija; J. Salmela; institutionCode: JES

h. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Repsuvuoma; decimalLatitude: 67.604; decimalLongitude: 24.967; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-6-1/26; habitat: rich fen; individualCount: 1; sex: male; catalogNumber: MYCE-NV-2013-0046; recordedBy: J. Salmela; identifiedBy: N. Vartija; J. Salmela; institutionCode: JES

i. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Vuotsonperänjänkä; decimalLatitude: 67.616; decimalLongitude: 25.449; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-5-31/6-25; habitat: rich fen; individualCount: 4; sex: male; catalogNumber: MYCE-NV-2013-0111; recordedBy: J. Salmela; identifiedBy: N. Vartija; J. Salmela; institutionCode: JES

j. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Pomokaira, Tarpomapää; decimalLatitude: 67.820; decimalLongitude: 25.919; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-6-1/29; habitat: spring brook, old-growth boreal forest; individualCount: 2; sex: male; catalogNumber: MYCE-NV-2013-0258; recordedBy: J. Salmela; identifiedBy: N. Vartija; J. Salmela; institutionCode: JES

k. country: Finland; stateProvince: Regio kuusamoensis; verbatimLocality: Salla, Kuntasjoki, Värriö Strict Nature Reserve; verbatimElevation: 320 m; decimalLatitude: 67.749; decimalLongitude: 29.617; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2013; verbatimEventDate: 2013-6-4/29; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: DIPT-JS-2014-00; recordedBy: J. Salmela; T. Hietajärvi; identifiedBy: J. Salmela; institutionCode: JES

Distribution

Holarctic. *Boletina groenlandica* (Fig. 12) was described from Greenland, and displays a northwestern distribution in Europe, including Great Britain, Germany, Latvia, Norway, Sweden, Finland and northwest Russia (Chandler 2004, Kjaerandsen 2012). British records are only from montane habitats in Scotland, mainly by streams above the tree line (Falk and Chandler 2005). All former Finnish records are old (1911, leg. R Frey) and originate from NW Finnish Lapland (Kittilä and Muonio, Lundström 1912b). Old records from NW Russia originate from Murmansk region (Kuzomen and Kandalaksha) and one recent record from Pasvik Nature Reserve (Polevoi 2010). New Finnish records presented here are from the north boreal zone.

Figure 12.

Boletina groenlandica Staeger, male specimen collected from Finland, Sodankylä (central Lapland). Male hypopygium (left, ventral view) and 9th tergite (right, dorsal view).

Ecology

New Finnish records are mainly from aapamires, including both poor and rich fens. Some of the specimens were taken from the vicinity of running water. Immature stages are unknown.

Boletina intermedia Lundström, 1915*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140831

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Sodankylä, Heinäaapa; decimalLatitude: 67.596; decimalLongitude: 26.883; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-6/7-6; habitat: rich spring fen; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2012-0079; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

b. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Sodankylä, Kaita-aapa; decimalLatitude: 67.845; decimalLongitude: 26.553; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-5/7-3; habitat: intermediate rich fen, aapamire; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0217; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

c. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-14/7-10; habitat: headwater stream, seminatural boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0187; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

d. country: Finland; stateProvince: Regio kuusamoensis; verbatimLocality: Salla, Kuntasjoki, Värriö Strict Nature Reserve; verbatimElevation: 320 m; decimalLatitude: 67.749; decimalLongitude: 29.617; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2013; verbatimEventDate: 2013-6-4/29; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: DIPT-JS-2014-0013; recordedBy: J. Salmela; T. Hietajärvi; identifiedBy: J. Salmela; institutionCode: JES

Distribution

Palaearctic. *Boletina intermedia* (Fig. 11b) is a poorly-known fungus gnat, described from Russia, New Siberian Islands (Lundström 1915). In Europe there is a previous record from Germany (Plassmann and Joost 1986) here reported for the first time from Fennoscandia. Finnish records are from the north boreal zone, central (Sodankylä) and eastern (Salla, Savukoski) Lapland.

Ecology

Collected from fens (an intermediate rich flark fen and a rich spring fen) and in the vicinity of a headwater stream. Immature stages are unknown.

Taxon discussion

See *Boletina borealis* Zetterstedt.

Boletina kivachiana Polevoi & Hedmark, 2004

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140834

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; habitat: headwater stream, seminatural boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0058; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

b. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja; decimalLatitude: 67.846; decimalLongitude: 29.471; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-14/7-10; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0107; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

c. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja, Ahot; decimalLatitude: 67.827; decimalLongitude: 29.435; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2013-8-7/9-19; habitat: swampy meadow with Carex tussocks; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0353; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

d. country: Russia; stateProvince: Republic Karelia; verbatimLocality: White Sea, island Kondostrov; decimalLatitude: 64.224; decimalLongitude: 36.622; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2002-8-21; individualCount: 3; sex: male; recordedBy: A. Humala; identifiedBy: A. Polevoi; institutionCode: FRIP

e. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Shun'ga, Turastamozero; decimalLatitude: 62.56; decimalLongitude: 34.706; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-24/8-24; individualCount: 21; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

f. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Kotinen_Aspen part; decimalLatitude: 61.244; decimalLongitude: 25.067; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-7-27/8-27; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

g. country: Finland; stateProvince: Savonia australis; municipality: Rantasalmi; locality: Linnansaari; decimalLatitude: 62.114; decimalLongitude: 28.479; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008-5-20/6-24; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

h. country: Finland; stateProvince: Nylandia; municipality: Sipoo; locality: Sipoonkorpi_1; decimalLatitude: 60.322; decimalLongitude: 25.157; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008-7-21/-8-6; habitat: old managed forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

i. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Reväsvuori 2/1; decimalLatitude: 61.070; decimalLongitude: 25.070; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-9-30; habitat: old managed forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

j. country: Finland; stateProvince: Regio kuusamoensis; verbatimLocality: Salla, Kuntasjoki, Värriö Strict Nature Reserve; verbatimElevation: 320 m; decimalLatitude: 67.749; decimalLongitude: 29.617; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2013; verbatimEventDate: 2013-6-29/7-29; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: DIPT-JS-2014-0035; recordedBy: J. Salmela; T. Hietajärvi; identifiedBy: J. Salmela; institutionCode: JES

Distribution

European. Described from Russian Karelia and northern Finland (Polevoi and Hedmark 2004), also found in Scotland (Edwards 1925, as *B. nigrofusca*), the Italian Alps (Kurina 2008), northern Sweden (Kjaerandsen et al. 2007), and northern Norway (Søli and Rindal 2012).

Ecology

In Fennoscandia it is a characteristic species of old-growth boreal forests. In Scotland recorded from wet native woodland (Falk and Chandler 2005) and from a broad-leaved forest (P. Chandler, pers.comm.). Immature stages are unknown.

Conservation

Red-listed in Finland (VU, Penttinen et al. 2010).

Boletina jamalensis Zaitzev, 1994

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=140832

Material

Holotype:

a. scientificName: *Boletina jamalensis;* originalNameUsage: *Boletina struthioides;* nameAccordingTo: Polevoi, A.V. 2013. On the systematics and distribution of some poorly known species of *Boletina* (Diptera: Mycetophilidae) in northern Europe, with the description of a new species. Zoosystematica Rossica 22: 114-122.; country: Finland; stateProvince: Lapponia enontekiensis; municipality: Enontekiö; locality: Kilpisjärvi; decimalLatitude: 69.044; decimalLongitude: 20.800; geodeticDatum: WGS84; samplingProtocol: Unknown method; eventDate: 1970-8-16/8-16; habitat: subarctic; individualCount: 1; sex: male; recordedBy: L.Tiensuu; identifiedBy: A.Polevoi; institutionCode: MZHF

Distribution

Palaearctic. Described from the Jamal Peninsula (Zaitzev 1994), later recorded as *Boletina struthioides* from northern areas of Russian Karelia, Finland (Kilpisjärvi) and Sweden (Vuollerim) (Polevoi and Hedmark 2004). The species *Boletina struthioides* Polevoi & Hedmark, 2004 was considered a junior synonym of *Boletina jamalensis* Zaitzev, 1994 by Polevoi (Polevoi 2013b).

Ecology

Karelian specimens were collected in mixed forests and adjacent meadows (Polevoi 2013b). Immature stages are unknown.

Boletina kurilensis Zaitzev, 1994

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=140836

Materials

a. country: Finland; stateProvince: Lapponia inarensis; municipality: Utsjoki; locality: Galddasjohka; decimalLatitude: 69.861; decimalLongitude: 27.790; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-7-19/8-27; habitat: subarctic stream valley; individualCount: 1; sex: male; recordedBy: J.Salmela; identifiedBy: J.Jakovlev; institutionCode: JJH

b. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja; decimalLatitude: 67.835; decimalLongitude: 29.454; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male;

catalogNumber: MYCE-JS-2013-0150; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

c. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; habitat: headwater stream, seminatural boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0117; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

Distribution

Palaearctic, described from Kuril Islands (Zaitzev 1994). In Europe, according to Polevoi (Polevoi 2013b) found only in the northernmost areas of northwest Russia (Murmansk Region), Finland (subarctic zone, Kilpisjärvi) and Norway (Finnmark). Former records from Russian Karelia (Jakovlev and Polevoi 1991, Jakovlev and Polevoi 1997, Polevoi 2000, Polevoi 2010), Finland (Jakovlev et al. 2006) and Sweden (Kjaerandsen et al. 2007), in fact belong to the recently described *Boletina palmata* Polevoi, 2013. Here reported from the boreal forest zone, Savukoski (eastern Lapland).

Ecology

Immature stages are unknown. Adults have been collected around lotic waters in a subarctic fell area (Utsjoki) and the coniferous zone (Savukoski), and also from mountain birch forests in Finland and Murmansk region (Polevoi 2013b).

Boletina landrocki Edwards, 1924**

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=140837

Materials

a. country: Russia; stateProvince: Leningrad province; verbatimLocality: Voznesenje, 1 km SE of Gimreka; decimalLatitude: 61.151; decimalLongitude: 35.642; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008-8-27/10-1; individualCount: 2; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

b. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Hattukivenmaa; decimalLatitude: 61.207; decimalLongitude: 25.153; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-7-27/8-27; habitat: old managed forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

c. country: Finland; stateProvince: Nylandia; municipality: Sipoo; locality: Käsis-Solbacka; decimalLatitude: 60.445; decimalLongitude: 25.193; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2005-5-13/6-13; habitat: young unmanaged forest; individualCount: 2; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

d. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; habitat: headwater stream, seminatural boreal forest; individualCount: 1; sex: male;

catalogNumber: MYCE-JS-2012-0068; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

e. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja; decimalLatitude: 67.846; decimalLongitude: 29.471; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; habitat: headwater stream, seminatural boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2012-0025; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

f. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Vuotsonperänjänkä; decimalLatitude: 67.616; decimalLongitude: 25.449; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-8-2/9-3; habitat: rich fen; individualCount: 1; sex: male; catalogNumber: MYCE-NV-2013-0117; recordedBy: J. Salmela; identifiedBy: N. Vartija; J. Salmela; institutionCode: JES

g. country: Finland; stateProvince: Regio kuusamoensis; verbatimLocality: Salla, Kuntasjoki, Värriö Strict Nature Reserve; verbatimElevation: 320 m; decimalLatitude: 67.749; decimalLongitude: 29.617; geodeticDatum: WGS84; samplingProtocol: Malaise trap; verbatimEventDate: 2013-7-29/9-19; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: DIPT-JS-2014-0069; recordedBy: J. Salmela; T. Hietajärvi; identifiedBy: J. Salmela; institutionCode: JES

Distribution

European. A rare species recorded from France (Chandler 2004) and Northern Europe: St. Petersburg (Zaitzev 1994), Finland, Estonia, Latvia (Chandler 2004), Scotland (Chandler 2006), Norway (Gammelmo and Søli 2006) and Sweden (Kjaerandsen et al. 2007). New to the Republic of Karelia.

Ecology

Finnish collecting sites in Lapland are a rich fen (Kittilä) and riparian forests (Savukoski). Karelian specimens were collected in secondary *Vaccinium myrtillus* type pine dominated forest. Immature stages are unknown.

Boletina lapponica Polevoi & Hedmark, 2004*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140838

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-10/8-16; habitat: headwater stream, seminatural boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0141; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

b. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; habitat: headwater stream, seminatural boreal forest; individualCount: 1; sex: male;

catalogNumber: MYCE-JS-2013-0112; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

c. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja, Ahot; decimalLatitude: 67.827; decimalLongitude: 29.435; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2013-8-7/9-19; habitat: headwater stream, seminatural boreal forest; individualCount: 2; sex: male; catalogNumber: MYCE-JS-2013-0357; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

Distribution

Fennoscandian. *Boletina lapponica* (Fig. 13) is known from northern Sweden (Lule Lappmark, Polevoi and Hedmark 2004, Kjaerandsen et al. 2007) and Russia (Republic Karelia, Kivach Nature Reserve, Polevoi and Hedmark 2004, Polevoi 2013a). New for Finland. Finnish records are from the north boreal zone, eastern Lapland (Savukoski).

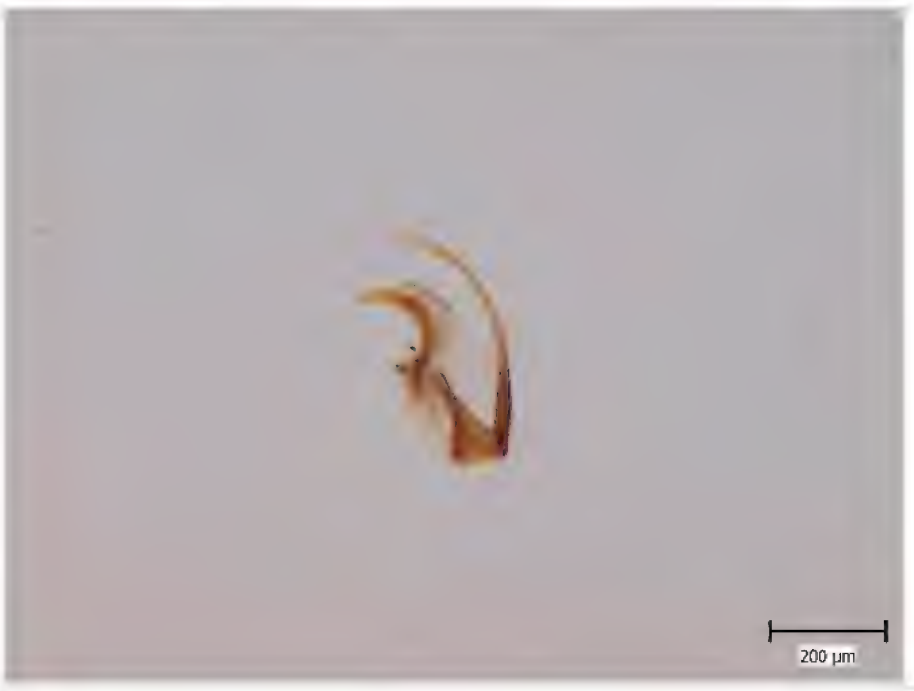

Figure 13.

Boletina lapponica Polevoi & Hedmark, male specimen collected from Finland, Savukoski (eastern Lapland). Aedeagus and parameres, lateral view.

Ecology

Finnish sampling localities are a headwater stream surrounded by boreal forest and a swampy meadow with *Carex* tussocks. Immature stages are unknown.

Boletina maculata Holmgren, 1870**

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140841

Materials

a. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Paanajarvi, Leppälä; decimalLatitude: 66.272; decimalLongitude: 30.091; geodeticDatum: WGS84;

samplingProtocol: Sweep netting; eventDate: 2000-7-3; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

b. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Pelkosenniemi; decimalLatitude: 67.15; decimalLongitude: 27.49; geodeticDatum: WGS84; eventDate: 1911; eventRemarks: exact sampling locality unknown; individualCount: 1; sex: male; recordedBy: R. Frey; identifiedBy: J. Jakovlev; institutionCode: MZHF

c. country: Finland; stateProvince: Regio kuusamoensis; verbatimLocality: Salla, Kuntasjoki, Värriö Strict Nature Reserve; verbatimElevation: 320 m; decimalLatitude: 67.749; decimalLongitude: 29.617; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2013; verbatimEventDate: 2013-6-4/29; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0396; recordedBy: J. Salmela; T. Hietajärvi; identifiedBy: J. Salmela; institutionCode: JES

Distribution

European. The species was described from Spitsbergen (Holmgren 1869) and has since been recorded in Europe from the Kola Peninsula in Russia (Lundström 1914, as *B. longicauda*, Zaitzev 1994), Sweden (Kjaerandsen et al. 2007) and Norway (Søli and Rindal 2012), and also from Latvia, Germany and Austria (Chandler 2004) indicating an arctic to boreal–mountainous distribution. Only three records exist so far from Finland, from Muonio (Lundström 1912b, as *B. longicauda*, leg. R Frey 1911), Pelkosenniemi and Salla, all from the north boreal zone. New to the Republic of Karelia.

Ecology

The Karelian specimen was collected in *Vaccinium myrtillus* type spruce dominated forest. The Finnish specimen from Salla was collected from a stream valley surrounded by old-growth boreal forest. Immature stages are unknown.

Boletina palmata Polevoi, 2013

Materials

a. country: Finland; stateProvince: Lapponia inarensis; municipality: Utsjoki; locality: Utsjoki; decimalLatitude: 69.909; decimalLongitude: 27.021; geodeticDatum: WGS84; samplingProtocol: Unknown method; eventDate: 1913; habitat: subarctic; individualCount: 1; sex: male; recordedBy: R.Frey; identifiedBy: A. Polevoi; institutionCode: MZHF

b. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Lapinjärvi; decimalLatitude: 61.238; decimalLongitude: 25.087; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-8-28/10-4; habitat: burnt clear-cut; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

c. country: Finland; stateProvince: Satakunta; municipality: Rantasalmi; locality: Linnansaari; decimalLatitude: 62.116; decimalLongitude: 28.476; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008-5-20/6-24; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

Distribution

Fennoscandian. The type material originates from Northwest Russia: Murmansk Region (holotype) and Karelia (paratype), recorded as *Boletina kurilensis* Zaitzev from Russian Karelia, Finland, Norway and Sweden (Polevoi 2013b).

Ecology

Immature stages are unknown.

Boletina pinusia Maximova, 2001

- Catalogue of Life http://www.catalogueoflife.org/col/details/species/id/8761104

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Sodankylä, Heinäaapa; decimalLatitude: 67.596; decimalLongitude: 26.883; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-6/7-6; habitat: rich spring fen; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2012-0092; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

b. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savuskoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-10/8-16; habitat: headwater stream, seminatural boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2012-0047; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

c. country: Finland; stateProvince: Regio kuusamoensis; verbatimLocality: Kuusamo, Oulanka National Park; decimalLatitude: 66.372; decimalLongitude: 29.309; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-1/30; habitat: headwater stream, seminatural boreal forest; individualCount: 2; sex: male; recordedBy: J. Salmela; identifiedBy: J. Salmela

d. country: Finland; stateProvince: Karelia australis; municipality: Savonlinna; locality: Vehkalahti; decimalLatitude: 61.762; decimalLongitude: 28.834; geodeticDatum: WGS84; samplingProtocol: sweep-netting; eventDate: 1971-6-5/6-5; individualCount: 1; sex: male; recordedBy: L.Tiensuu; identifiedBy: J.Jakovlev; institutionCode: MZHF

e. country: Finland; stateProvince: Karelia australis; municipality: Savonlinna; locality: Vehkalahti; decimalLatitude: 61.762; decimalLongitude: 28.834; geodeticDatum: WGS84; samplingProtocol: sweep-netting; eventDate: 1971-10-9/10-9; individualCount: 1; sex: male; recordedBy: L.Tiensuu; identifiedBy: A.Polevoi and J.Jakovlev; institutionCode: MZHF

f. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Kotinen_Spruce part; decimalLatitude: 61.246; decimalLongitude: 25.069; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2003-9-1/9-10; habitat: old-growth forest, Myrtillus type; individualCount: 3; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

g. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Kotinen_Spruce part; decimalLatitude: 61.246; decimalLongitude: 25.069; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2003-9-3/10-3;

habitat: old-growth forest, Myrtillus type; individualCount: 95; sex: male; recordedBy: J.Jakovlev; identifiedBy: A.Polevoi

h. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Kotinen_Spruce part; decimalLatitude: 61.246; decimalLongitude: 25.069; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2003-9-15/-10-15; habitat: old-growth forest, Myrtillus type; individualCount: 82; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

i. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Kotinen_Spruce part; decimalLatitude: 61.246; decimalLongitude: 25.069; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2003-10-3/10-15; habitat: old-growth forest, Myrtillus type; individualCount: 12; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

j. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Pukkivuori (metsikkö_514 K); decimalLatitude: 61.219; decimalLongitude: 25.157; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2003-9-1/9-10; habitat: old managed forest, Myrtillus type; individualCount: 35; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

k. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Pukkivuori (metsikkö_514 K); decimalLatitude: 61.219; decimalLongitude: 25.157; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2003-9-15/10-3; habitat: old managed forest, Myrtillus type; individualCount: 104; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

l. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Pukkivuori (metsikkö_514 K); decimalLatitude: 61.219; decimalLongitude: 25.157; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2003-10-3/10-15; habitat: old managed forest, Myrtillus type; individualCount: 30; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

m. country: Finland; stateProvince: Regio aboënsis; municipality: Karjalohja; locality: Karkali_South; decimalLatitude: 60.238; decimalLongitude: 23.785; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-6-16/8-23; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

n. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Hankajärvi; decimalLatitude: 61.204; decimalLongitude: 25.160; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-8-28/10-4; habitat: burnt clear-cut; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

o. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Hattukivenmaa; decimalLatitude: 61.207; decimalLongitude: 25.153; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-8-28/10-4; habitat: burnt clear-cut; individualCount: 25; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

p. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Hattukivenmaa; decimalLatitude: 61.207; decimalLongitude: 25.153; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-5-28/6-28; habitat: old managed forest, Myrtillus type; individualCount: 3; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

q. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Kotinen_Aspen part; decimalLatitude: 61.244; decimalLongitude: 25.067; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-7-27/8-27; habitat: old-growth forest, herb-rich type; individualCount: 5; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

r. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Kotinen_Aspen part; decimalLatitude: 61.244; decimalLongitude: 25.067; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-8-28/10-4; habitat: old-growth forest, herb-rich type; individualCount: 2; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

s. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Kotinen_Aspen part; decimalLatitude: 61.244; decimalLongitude: 25.067; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-4-28/5-27; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

t. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Lapinjärvi; decimalLatitude: 61.238; decimalLongitude: 25.087; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-7-27/8-27; habitat: burnt clear-cut; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

u. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Lapinjärvi; decimalLatitude: 61.238; decimalLongitude: 25.087; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-8-28/10-4; habitat: burnt clear-cut; individualCount: 3; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

v. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Leipäsuonaho; decimalLatitude: 61.203; decimalLongitude: 25.065; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-7-27/8-27; habitat: clear-cut; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

w. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Leipäsuonaho; decimalLatitude: 61.203; decimalLongitude: 25.062; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-8-28/10-4; habitat: clear-cut; individualCount: 3; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

x. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Leipäsuonaho; decimalLatitude: 61.203; decimalLongitude: 25.064; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-8-28/10-4; habitat: clear-cut; individualCount: 6; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

y. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Leipäsuonaho; decimalLatitude: 61.204; decimalLongitude: 25.059; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-8-28/10-4; habitat: burnt clear-cut; individualCount: 3; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

z. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Leipäsuonaho; decimalLatitude: 61.205; decimalLongitude: 25.064; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-8-28/10-4; habitat: old managed forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

aa. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Leipäsuonaho; decimalLatitude: 61.205; decimalLongitude: 25.064; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-5-28/6-28; habitat: old managed forest, Myrtillus type; individualCount: 2; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

ab. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Niemisjärvi; decimalLatitude: 61.216; decimalLongitude: 25.028; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-5-28/6-28; habitat: old managed forest, Myrtillus type; individualCount: 5; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

ac. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Palohonka; decimalLatitude: 61.222; decimalLongitude: 25.037; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-7-27/10-4; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

ad. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Puukkohonka; decimalLatitude: 61.222; decimalLongitude: 25.052; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-7-27/8-27; habitat: old-growth forest, Myrtillus type; individualCount: 2; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

ae. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Puukkohonka; decimalLatitude: 61.222; decimalLongitude: 25.052; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-8-28/10-4; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

af. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Puukkohonka; decimalLatitude: 61.222; decimalLongitude: 25.052; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-5-28/6-28; habitat: old-growth forest, Myrtillus type; individualCount: 23; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

ag. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Saarijärventie_2; decimalLatitude: 61.229; decimalLongitude: 25.060; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-7-27/8-27; habitat: clear-cut; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

ah. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Saarijärventie_2; decimalLatitude: 61.229; decimalLongitude: 25.060; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-8-28/10-4; habitat: clear-cut; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

ai. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Saarijärvi; decimalLatitude: 61.230; decimalLongitude: 25.061; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-5-28/6-28; habitat: old managed forest, Myrtillus type; individualCount: 3; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

aj. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Siperiantie_1; decimalLatitude: 61.268; decimalLongitude: 25.158; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-8-28/10-4; habitat: old managed forest, Myrtillus type; individualCount: 2; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

ak. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Siperiantie_1; decimalLatitude: 61.268; decimalLongitude: 25.158; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-6-29/7-26; habitat: old managed forest, Myrtillus type; individualCount: 3; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

al. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Siperiantie_2; decimalLatitude: 61.268; decimalLongitude: 25.160; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-7-27/8-27; habitat: clear-cut; individualCount: 3; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

am. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Siperiantie_2; decimalLatitude: 61.268; decimalLongitude: 25.160; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-8-28/10-4; habitat: clear-cut; individualCount: 14; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

an. country: Finland; stateProvince: Tavastia australis; municipality: Padasjoki; locality: Vesijako Strict Nature Reserve; decimalLatitude: 61.349; decimalLongitude: 25.105; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-7-26/8-27; habitat: old-growth forest, Myrtillus type; individualCount: 2; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

ao. country: Finland; stateProvince: Tavastia australis; municipality: Padasjoki; locality: Vesijako Strict Nature Reserve; decimalLatitude: 61.349; decimalLongitude: 25.105; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-8-28/10-4; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

ap. country: Finland; stateProvince: Tavastia australis; municipality: Padasjoki; locality: Vesijako Strict Nature Reserve; decimalLatitude: 61.349; decimalLongitude: 25.105; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-8-28/10-4; habitat: old-growth forest, Myrtillus type; individualCount: 6; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

aq. country: Finland; stateProvince: Tavastia borealis; municipality: Rautalampi; locality: Kalajavuori; decimalLatitude: 62.578; decimalLongitude: 26.698; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-5-3/6-6; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

ar. country: Finland; stateProvince: Lapponia kittilensis; municipality: Kolari; locality: Kolari_4; decimalLatitude: 67.234; decimalLongitude: 23.693; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-7-15/8-15; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev

as. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; municipality: Muonio; locality: Pallas-Yllästunturi National Park_Yllas_3; decimalLatitude: 67.592; decimalLongitude: 24.188; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-7-15/8-15; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev

at. country: Finland; stateProvince: Tavastia borealis; municipality: Kannonkoski; locality: Raakkipuro_1; decimalLatitude: 62.958; decimalLongitude: 25.444; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008-5-8/6-29; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

au. country: Finland; stateProvince: Tavastia borealis; municipality: Kannonkoski; locality: Raakkipuro_2; decimalLatitude: 62.957; decimalLongitude: 25.445; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008-5-8/6-29; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

av. country: Finland; stateProvince: Tavastia australis; municipality: Muurame; locality: Kuusimäki Forest Reserve; decimalLatitude: 62.215; decimalLongitude: 25.496; geodeticDatum: WGS84; samplingProtocol: Reared from wood; eventDate: 2008-8-21/10-5; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: Noora Vartija; identifiedBy: J.Penttinen; institutionCode: JPJ

aw. country: Finland; stateProvince: Tavastia australis; municipality: Padasjoki; locality: Vesijako Strict Nature Reserve; decimalLatitude: 61.355; decimalLongitude: 25.106; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2008-8-18/8-18; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

ax. country: Finland; stateProvince: Tavastia borealis; municipality: Rautalampi; locality: Kalajavuori; decimalLatitude: 62.573; decimalLongitude: 26.685; geodeticDatum: WGS84; samplingProtocol: Sweep-netting; eventDate: 2008-5-3/6-6; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

ay. country: Finland; stateProvince: Tavastia borealis; municipality: Saarijärvi; locality: Pyhä-Häkki National Park; decimalLatitude: 62.842; decimalLongitude: 25.474; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

az. country: Finland; stateProvince: Nylandia; municipality: Sipoo; locality: Sipoonkorpi_1; decimalLatitude: 60.322; decimalLongitude: 25.157; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008-8-6/8-22; habitat: old managed forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev

Distribution

Palaearctic, known from Russia (West Siberia, NW Russia), Finland, Norway, Sweden and Italy (Kurina 2008, as *B. jamalensis*, Søli and Rindal 2012, Polevoi 2013b). *Boletina pinusia* was recently redescribed and discussed by Polevoi 2013b. This species has been misintepreted by European authors as *B. jamalensis* sensu auct.; true *B. jamalensis* Zaitzev, also occurring in Fennoscandia, was redescribed and discussed by Polevoi 2013b.

Ecology

In Finland, the species has been collected in tens of sites, mostly in old-growth coniferous forests, also in ordinary clear-cuts and clear-cuts with retention trees treated with prescribed burning. Collected from a decaying aspen tree by using an eclector trap in Finland (as *B. jamalensis*, Halme et al. 2013)

Boletina polaris Lundström, 1915*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140861

Materials

a. country: Finland; stateProvince: Ostrobothnia borealis pars borealis; verbatimLocality: Ylitornio, Tuorerommas; decimalLatitude: 66.476; decimalLongitude: 24.756; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-6/9-26; habitat: spring brook, old-growth forest; individualCount: 2; sex: male; catalogNumber: MYCE-JS-2012-0061; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

b. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; habitat: headwater stream, seminatural boreal forest; individualCount: 3; sex: male; catalogNumber: MYCE-JS-2012-0067; recordedBy: J. Salmela; otherCatalogNumbers: MYCE-JS-2013-0062; identifiedBy: J. Salmela; institutionCode: JES

c. country: Finland; stateProvince: Regio kuusamoensis; verbatimLocality: Salla, Kuntasjoki, Värriö Strict Nature Reserve; verbatimElevation: 320 m; decimalLatitude: 67.749; decimalLongitude: 29.617; geodeticDatum: WGS84; samplingProtocol: Malaise trap; verbatimEventDate: 2013-7-29/9-19; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: DIPT-JS-2014-0054; recordedBy: J. Salmela; T. Hietajärvi; identifiedBy: J. Salmela; institutionCode: JES

Distribution

Palaearctic. *Boletina polaris* (Fig. 14) was described from arctic Siberia (Lundström 1915) and has been later found from the Kola Peninsula, northernmost parts of Russia (Zaitzev 1994), north Sweden (Lule Lappmark, Kjaerandsen et al. 2007), Norway (Søli and Rindal 2012), Germany (Chandler 2004) and the Italian Alps (Kurina 2008). New for Finland. Finnish records are from SW Lapland (mid boreal zone) and eastern Lapland (north boreal zone).

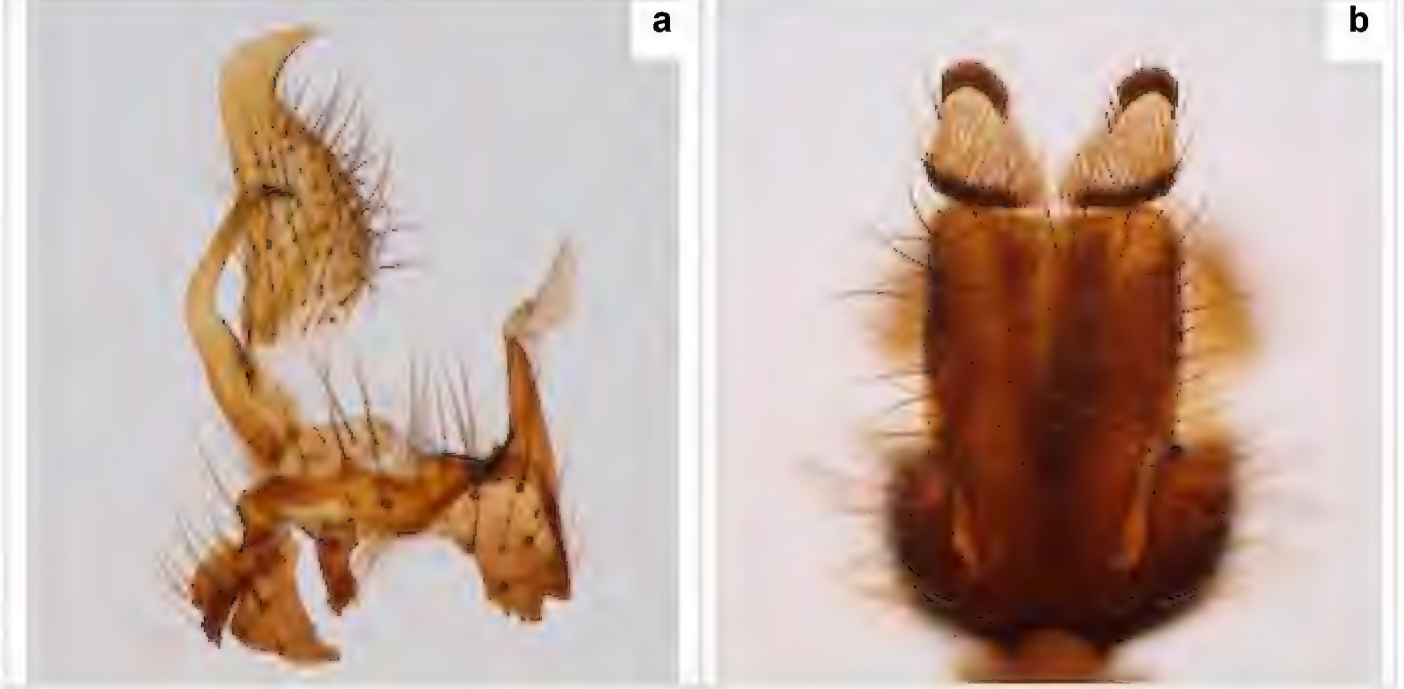

Figure 14.

Boletina polaris Lundström, male specimen collected from Finland, Savukoski (northeastern Lapland).

a: Gonostylus, lateral view.
b: 9th tergite, dorsal view.

Ecology

Finnish collecting localities are characterized by small lotic waters surrounded by pristine or seminatural boreal forests. Immature stages are unknown.

Boletina pseudonitida Zaitzev, 1994*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140863

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; habitat: headwater stream; individualCount: 5; sex: male; catalogNumber: MYCE-JS-2013-0020; recordedBy: J. Salmela; otherCatalogNumbers: MYCE-JS-2013-0061; identifiedBy: J. Salmela; institutionCode: JES

b. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja; decimalLatitude: 67.846; decimalLongitude: 29.471; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0147; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

c. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Sodankylä, Pomokaira, Syväkuru; decimalLatitude: 67.871; decimalLongitude: 26.210; geodeticDatum: WGS84; samplingProtocol: sugar bait, hand net; eventDate: 2012-8-21; habitat: old-growth spruce forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0262; recordedBy: J. Salmela, Jari Aaltio; identifiedBy: J. Salmela; institutionCode: JES

d. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Kielisenpalo; decimalLatitude: 68.020; decimalLongitude: 25.063; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-7-28/8-31; habitat: rich spring fen; individualCount: 1; sex: male; catalogNumber: MYCE-NV-2013-0086; recordedBy: J. Salmela; identifiedBy: N. Vartija; institutionCode: JES

e. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Sodankylä, Ylä-Postojoki; decimalLatitude: 67.851; decimalLongitude: 26.481; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-6-29/8-3; habitat: headwater stream; individualCount: 1; sex: male; catalogNumber: MYCE-NV-2013-0157; recordedBy: J. Salmela; identifiedBy: N. Vartija; institutionCode: JES

f. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Pomokaira, Tarpomapää; decimalLatitude: 67.820; decimalLongitude: 25.919; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-6-1/29; habitat: spring brook, spruce mire; individualCount: 28; sex: male; catalogNumber: MYCE-NV-2013-0243; recordedBy: J. Salmela; identifiedBy: N. Vartija; institutionCode: JES

g. country: Finland; stateProvince: Lapponia enontekiensis; verbatimLocality: Enontekiö, Kilpisjärvi, Saana; decimalLatitude: 69.0456; decimalLongitude: 20.8186; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-7-15/8-1; individualCount: 2; sex: male; recordedBy: J. Jakovlev; J. Penttinen; identifiedBy: J. Jakovlev

Distribution

Palaearctic. *Boletina pseudonitida* (Fig. 15) was described from the Altai Mountains (Zaitzev 1994) and has been since only recorded from north Sweden (Kjaerandsen et al. 2007) and northernmost Norway (Søli and Rindal 2012). New for Finland.

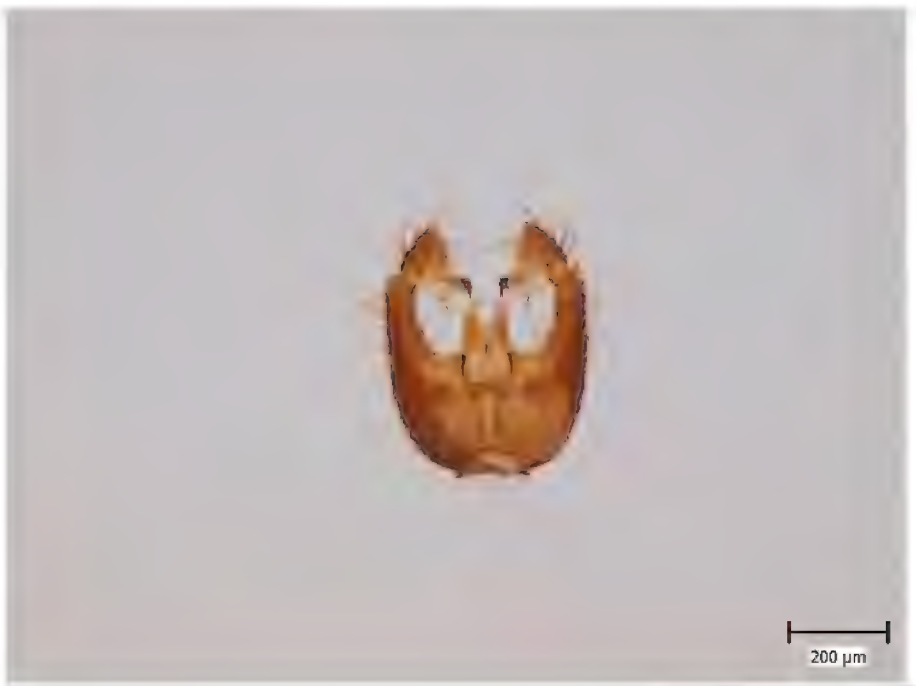

Figure 15.

Boletina pseudonitida Zaitzev, male specimen collected from Finland, Savukoski (northeastern Lapland). Male hypopygium, ventral view.

Ecology

Finnish collecting sites are mainly coniferous forests around lotic waters, also caught from a subarctic mountain birch forest and from a rich fen. Immature stages are unknown.

Boletina takagii Sasakawa & Kimura, 1974

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140872

Materials

a. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Gizhino; decimalLatitude: 60.993; decimalLongitude: 33.79; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008-7-4/6; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

b. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Shunga, Turastamozero; decimalLatitude: 62.559; decimalLongitude: 34.709; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-21/8-24; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

c. country: Russia; stateProvince: Leningrad province; verbatimLocality: Gimreka; decimalLatitude: 61.150; decimalLongitude: 35.641; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008-6-26/7-25; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

d. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Sodankylä, Ylä-Postojoki; decimalLatitude: 67.851; decimalLongitude: 26.481; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-6-29/8-3; habitat: headwater stream; individualCount: 1; sex: male; catalogNumber: MYCE-

NV-2013-0162; recordedBy: J. Salmela; identifiedBy: N. Vartija; J. Salmela; institutionCode: JES

e. country: Finland; stateProvince: Lapponia inarensis; verbatimLocality: Utsjoki; decimalLatitude: 69.88; decimalLongitude: 27.04; geodeticDatum: WGS84; georeferenceRemarks: no detailed information on the sampling locality; eventDate: undated; individualCount: 4; sex: male; identifiedBy: J. Jakovlev; institutionCode: MZHF

Distribution

Palaearctic. The species was described from Japan (Sasakawa and Kimura 1974) and has been later found on the Kuril Islands (Zaitzev 1994). In Europe it has recently been reported only from the Fennoscandian region: Russian Karelia (Polevoi 2000), Murmansk Province (Polevoi 2010), Finland (Jakovlev et al. 2006), Sweden (Kjaerandsen et al. 2007) and Norway (Gammelmo and Søli 2006, Søli and Rindal 2012). All Finnish findings are from the north boreal (Sodankylä) and subarctic (Utsjoki) areas, however in Eastern Fennoscandia there are also records from the south boreal zone.

Ecology

The trapping site in Sodankylä is a headwater stream surrounded by coniferous forest. In NW Russia collected mainly in secondary deciduous and mixed forests but also in mountain scrub. Immature stages are unknown.

Boletina tiroliensis Plassmann, 1980**

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=140873

Materials

a. country: Russia; stateProvince: Republic Karelia; verbatimLocality: 5 km N of Tolvojarvi; decimalLatitude: 62.318; decimalLongitude: 31.436; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 1999-9-13/29; individualCount: 1; sex: male; recordedBy: M. Tietäväinen et al.; identifiedBy: A. Polevoi; institutionCode: FRIP

b. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; habitat: headwater stream, seminatural boreal forest; individualCount: 2; sex: male; catalogNumber: MYCE-JS-2013-0053; recordedBy: J. Salmela; otherCatalogNumbers: MYCE-JS-2013-0111; identifiedBy: J. Salmela; institutionCode: JES

c. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; municipality: Kittilä; locality: Pallas-Yllästunturi National Park; decimalLatitude: 69.018; decimalLongitude: 24.153; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-7-15/8-14; habitat: old-growth forest, Myrtillus type; individualCount: 4; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev

d. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; municipality: Kittilä; locality: Pallas-Yllästunturi National Park; decimalLatitude: 68.038; decimalLongitude: 24.136; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate:

2006-7-15/8-14; habitat: old-growth forest, Myrtillus type; individualCount: 2; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev

e. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; municipality: Kittilä; locality: Pallas-Yllästunturi National Park; decimalLatitude: 68.038; decimalLongitude: 24.136; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-8-15/9-15; habitat: old-growth forest, Myrtillus type; individualCount: 2; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev

Distribution

Palaearctic. Known from Austria (Plassmann 1980), Sweden (Kjaerandsen et al. 2007), Norway (Gammelmo and Søli 2006, Søli and Rindal 2012), Russia (Dikson island, Yamal Peninsula, Kola Peninsula, Yakutia Zaitzev 1994) and Finland (Polevoi et al. 2006). Finnish records are from the mid boreal (Kainuu Province, Ostrobothnia kajanense Polevoi et al. 2006) and north boreal zones (material presented here). New to the Republic of Karelia.

Ecology

Finnish collecting sites are old-growth boreal forests and a headwater stream surrounded by seminatural boreal forest. The Karelian specimen was collected in *Vaccinium myrtillus* type spruce dominated forest. Immature stages are unknown.

Conservation

Red-listed in Norway (NT, Anonymous 2010, Gammelmo et al. 2010)

Boletina verticillata Stackelberg, 1943

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140877

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja; decimalLatitude: 67.846; decimalLongitude: 29.471; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-10/8-16; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2012-0009; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

b. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; habitat: headwater stream, seminatural boreal forest; individualCount: 7; sex: male; catalogNumber: MYCE-JS-2013-0017; recordedBy: J. Salmela; otherCatalogNumbers: MYCE-JS-2013-0060; identifiedBy: J. Salmela; institutionCode: JES

c. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Vuotsonperänjänkä; decimalLatitude: 67.616; decimalLongitude: 25.449; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; habitat: rich fen; individualCount: 1; sex: male; catalogNumber: MYCE-NV-2013-0116;

recordedBy: J. Salmela; otherCatalogNumbers: MYCE-JS-2013-0060; identifiedBy: N. Vartija; collectionID: 2007-8-1/9-3; institutionCode: JES

d. country: Finland; stateProvince: Lapponia inarensis; verbatimLocality: Utsjoki, Kaldoaivi, Galddasjohka; decimalLatitude: 69.860; decimalLongitude: 27.809; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-7-19/8-27; habitat: headwater stream, fell area; individualCount: 4; sex: male; recordedBy: J. Salmela; identifiedBy: J. Jakovlev

e. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; municipality: Kittilä; locality: Kittilä; decimalLatitude: 67.654; decimalLongitude: 24.898; geodeticDatum: WGS84; eventDate: 1900; habitat: subarctic; individualCount: 1; sex: male; recordedBy: R.Frey; identifiedBy: J. Jakovlev; institutionCode: MZHF

f. country: Finland; stateProvince: Lapponia inarensis; municipality: Utsjoki; locality: Galddasjohka; decimalLatitude: 69.861; decimalLongitude: 27.790; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-7-19/8-27; habitat: subarctic; individualCount: 1; sex: male; recordedBy: J.Salmela; identifiedBy: J.Jakovlev; institutionCode: JJH

g. country: Finland; stateProvince: Lapponia inarensis; municipality: Utsjoki; locality: Galddasjohka; decimalLatitude: 69.860; decimalLongitude: 27.770; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-7-19/8-27; habitat: subarctic; individualCount: 1; sex: male; recordedBy: J.Salmela; identifiedBy: J.Jakovlev; institutionCode: JJH

Distribution

Palaearctic. *Boletina verticillata* (Fig. 16) was described from NW Siberia (Stackelberg 1943) and has been later found from Russian Far East, Mongolia (Zaitzev 1994), Norway (Gammelmo and Søli 2006, Gammelmo et al. 2010) and Sweden (Kjaerandsen et al. 2007). Finnish records are from the north boreal zone (Kittilä, Savukoski) and from the subarctic zone (Utsjoki).

Figure 16.

Boletina verticillata Stackelberg, male specimen collected from Finland, Savukoski (eastern Lapland). Habitus, lateral view.

Ecology

Finnish sampling localities are riparian forests and a rich fen. Immature stages are unknown.

Conservation

Red-listed in Norway (VU, Anonymous 2010, Gammelmo et al. 2010).

Coelosia gracilis Johannsen, 1912***

- Catalogue of Life http://www.catalogueoflife.org/col/details/species/id/8668681

Materials

a. country: Finland; stateProvince: Regio kuusamoensis; verbatimLocality: Salla, Kuntasjoki, Värriö Strict Nature Reserve; verbatimElevation: 320 m; decimalLatitude: 67.749; decimalLongitude: 29.617; geodeticDatum: WGS84; samplingProtocol: Malaise trap; verbatimEventDate: 2013-7-29/9-19; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: DIPT-JS-2014-0057; recordedBy: J. Salmela; T. Hietajärvi; identifiedBy: J. Salmela; institutionCode: JES

b. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; habitat: headwater stream, seminatural boreal forest; individualCount: 5; sex: male; catalogNumber: MYCE-JS-2013-0007; recordedBy: J. Salmela; otherCatalogNumbers: MYCE-JS-2013-0059; identifiedBy: J. Salmela; A. Polevoi; institutionCode: JES

c. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja; decimalLatitude: 67.846; decimalLongitude: 29.471; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; habitat: headwater stream, old-growth boreal forest; individualCount: 4; sex: male; recordedBy: J. Salmela; otherCatalogNumbers: MYCE-JS-2013-0059; identifiedBy: J. Salmela; A. Polevoi; institutionCode: JES

d. country: Finland; stateProvince: Lapponia enontekiensis; verbatimLocality: Enontekiö, Kilpisjärvi, Saana; decimalLatitude: 69.044; decimalLongitude: 20.816; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-6-19/7-14; habitat: mountain birch forest, herb rich vegetation; individualCount: 1; sex: male; recordedBy: J. Jakovlev; J. Penttinen; identifiedBy: J. Jakovlev; institutionCode: JJH

e. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Vielmakoskenpalo NW; decimalLatitude: 68.009; decimalLongitude: 25.044; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-8-2/31; habitat: rich spruce mire; individualCount: 8; sex: male; catalogNumber: MYCE-NV-2013-0189; recordedBy: J. Salmela; identifiedBy: N. Vartija; J. Salmela; institutionCode: JES

Distribution

Holarctic. *Coelosia gracilis* (Fig. 17) is here reported for the first time from the Palaearctic region. The species was described from the USA, California and Colorado

(Johannsen 1911) and according to Søli (Søli 1997) the species has a wide range in the western part of the Nearctic region.

Figure 17.

Coelosia gracilis (Johannsen), male specimen collected from Finland, Savukoski (northeastern Lapland). Habitus, lateral view.

Ecology

Finnish sampling sites are headwater streams surrounded by boreal forests, a mountain birch forest and a rich spruce mire. Immature stages are unknown.

Taxon discussion

Coelosia gracilis is very close to the European species *Coelosia truncata* Lundström, 1909, and perhaps overlooked in the Palaearctic region.

Coelosia flava (Stæger, 1840)**

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=140782

Material

a. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Obzha, Mayachino; decimalLatitude: 60.777; decimalLongitude: 32.818; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-22/8; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

Distribution

European. Widely distributed (Chandler 2004). New to the Republic of Karelia.

Ecology

The Karelian specimen was collected in a black alder fen. Immature stages are unknown. *Coelosia* larvae are generally associated with fungal fruiting bodies (Jakovlev 1994), but some species have been collected with eclector traps over dead wood, or on soil (Jakovlev et al. 1994, Økland 1999).

Coelosia limpida Plassmann, 1986*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140786

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; habitat: headwater stream, seminatural boreal forest; individualCount: 26; sex: male; catalogNumber: MYCE-JS-2012-0073; recordedBy: J. Salmela; otherCatalogNumbers: MYCE-JS-2013-0005; identifiedBy: J. Salmela; institutionCode: JES

b. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja; decimalLatitude: 67.846; decimalLongitude: 29.471; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; habitat: headwater stream, old-growth boreal forest; individualCount: 26; sex: male; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

c. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Repsuvuoma; decimalLatitude: 67.604; decimalLongitude: 24.967; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-8-1/9-3; habitat: rich fen; individualCount: 26; sex: male; catalogNumber: MYCE-NV-2013-0048; recordedBy: J. Salmela; identifiedBy: N. Vartija; institutionCode: JES

d. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Repsuvuoma; decimalLatitude: 67.582; decimalLongitude: 25.543; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-8-1/9-3; habitat: rich fen; individualCount: 1; sex: male; recordedBy: J. Salmela; identifiedBy: N. Vartija

e. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Taljavaaranvuoma; decimalLatitude: 67.578; decimalLongitude: 25.358; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-8-1/9-2; habitat: rich fen; individualCount: 10; sex: male; catalogNumber: MYCE-NV-2013-0069; recordedBy: J. Salmela; identifiedBy: N. Vartija; institutionCode: JES

f. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Kielisenpalo; decimalLatitude: 68.020; decimalLongitude: 25.063; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-8-1/31; habitat: rich spring fen; individualCount: 2; sex: male; catalogNumber: MYCE-NV-2013-0081; recordedBy: J. Salmela; identifiedBy: N. Vartija; institutionCode: JES

g. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Vuotsonperänjänkä; decimalLatitude: 67.616; decimalLongitude: 25.449; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-8-1/9-3; habitat: rich fen; individualCount: 5; sex: male; recordedBy: J. Salmela; identifiedBy: N. Vartija

h. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Vielmakoskenpalo; decimalLatitude: 68.008; decimalLongitude: 25.046;

geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-8-2/31; habitat: rich fen; individualCount: 52; sex: male; recordedBy: J. Salmela; identifiedBy: N. Vartija

i. country: Finland; stateProvince: Nylandia; verbatimLocality: Espoo, Matalajärvi; decimalLatitude: 60.247; decimalLongitude: 24.687; geodeticDatum: WGS84; samplingProtocol: Malaise trap; samplingEffort: 8 traps; eventDate: 2012-7-21/10-20; habitat: swampy lake shore; individualCount: 368; sex: male; catalogNumber: MYCE-JS-2013-0274; recordedBy: J. Salmela; otherCatalogNumbers: MYCE-JS-2013-0298; identifiedBy: J. Salmela; institutionCode: JES

j. country: Finland; stateProvince: Karelia ladogensis; municipality: Parikkala; locality: Lake Siikalahti W Kaukola; decimalLatitude: 61.561; decimalLongitude: 29.593; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-6-24/8-19; habitat: old managed forest, swampy; individualCount: 1; sex: male; recordedBy: M.Jaschhof and C.Jaschhof; identifiedBy: J.Jakovlev; institutionCode: JJH

k. country: Finland; stateProvince: Karelia ladogensis; municipality: Parikkala; locality: Lake Siikalahti W Kaukola, <100m; decimalLatitude: 61.561; decimalLongitude: 29.593; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2004-8-19/8-19; habitat: old managed forest, swampy; individualCount: 2; sex: male; recordedBy: M.Jaschhof and C.Jaschhof; identifiedBy: J.Jakovlev; institutionCode: JJH

l. country: Finland; stateProvince: Lapponia inarensis; municipality: Utsjoki; locality: Galddasjohka; decimalLatitude: 69.861; decimalLongitude: 27.790; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-7-19/8-27; habitat: stream valley with a narrow belt of mountain birch forest; individualCount: 1; sex: male; recordedBy: J.Salmela; identifiedBy: J.Jakovlev; institutionCode: JJH

Distribution

Fennoscandian species, only known from Sweden (Plassmann 1987, Kjaerandsen et al. 2007), Norway (Gammelmo et al. 2010, Søli and Rindal 2012), Russian Karelia (Humala and Polevoi 2009) and Murmansk Province (Polevoi 2010). New for Finland. Wide range in Finland, known from the hemiboreal, north boreal and subarctic zones.

Ecology

All Finnish collecting sites are wetlands, in a wide sense. The species is apparently quite common on rich fens in central Lapland (Kittilä) and it was very numerous on the shores of Lake Matalajärvi, Espoo (hemiboreal zone). *Coelosia limpida* may prefer calcareous habitats. Immature stages are unknown.

Conservation

Red-listed in Norway (DD, Anonymous 2010, Gammelmo et al. 2010).

Ectrepesthoneura nigra Zaitzev, 1984* **

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=140766

Materials

a. country: Russia; stateProvince: Republic Karelia; verbatimLocality: 5 km N of Tolvojarvi; decimalLatitude: 62.318; decimalLongitude: 31.436; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 1999-6-11/22; individualCount: 1; sex: male; recordedBy: M. Tietäväinen et al.; identifiedBy: A. Polevoi; institutionCode: FRIP

b. country: Finland; stateProvince: Regio kuusamoensis; verbatimLocality: Salla, Kuntasjoki, Värriö Strict Nature Reserve; verbatimElevation: 320 m; decimalLatitude: 67.749; decimalLongitude: 29.617; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2013; verbatimEventDate: 2013-6-4/29; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: DIPT-JS-2014-0006; recordedBy: J. Salmela; T. Hietajärvi; identifiedBy: J. Salmela; institutionCode: JES

Distribution

European. The species was known from the type locality in Central Russia (Zaitzev 1994) and Norway (Gammelmo and Søli 2006). New to the Republic of Karelia and Finland.

Ecology

The Karelian specimen was collected in *Vaccinium myrtillus* type spruce dominated forest. The Finnish sampling site is a north boreal headwater stream with swampy margins, surrounded by old-growth spruce forest. Larvae feed on fungal mycelium in decaying wood (Zaitzev 1994).

Conservation

Red-listed in Norway (NT, Anonymous 2010, Gammelmo et al. 2010).

Gnoriste bilineata Zetterstedt, 1852

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=140749

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja; decimalLatitude: 67.846; decimalLongitude: 29.471; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-10/8-16; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2012-0001; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

b. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-10/8-16; habitat: headwater stream, seminatural boreal forest; individualCount: 6; sex: male; catalogNumber: MYCE-JS-2012-0037; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

c. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Sodankylä, Ylä-Postojoki; decimalLatitude: 67.851; decimalLongitude: 26.481; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-6-29/8-3; habitat: headwater stream, seminatural boreal forest; individualCount: 6; sex: male; catalogNumber: MYCE-NV-2013-0155; recordedBy: J. Salmela; identifiedBy: N. Vartija; institutionCode: JES

d. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Vielmakoskenpalo NW; decimalLatitude: 68.009; decimalLongitude: 25.044; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-6-26/8-1; habitat: rich spruce mire; individualCount: 1; sex: male; catalogNumber: MYCE-NV-2013-0181; recordedBy: J. Salmela; identifiedBy: N. Vartija; institutionCode: JES

e. country: Finland; stateProvince: Tavastia borealis; municipality: Tuovilanlaks; locality: Vammelsjoki; decimalLatitude: 63.228; decimalLongitude: 27.115; geodeticDatum: WGS84; eventDate: 1905; individualCount: 1; sex: male; recordedBy: W.Hellen; identifiedBy: C.Lundström; institutionCode: MZHF

f. country: Finland; stateProvince: Regio aboënsis; municipality: Vihti; locality: Vihtijärvi; decimalLatitude: 60.523; decimalLongitude: 24.556; geodeticDatum: WGS84; eventDate: 1905; habitat: herb-rich forest; individualCount: 1; sex: male; recordedBy: R.Frey; identifiedBy: C.Lundström; institutionCode: MZHF

g. country: Finland; stateProvince: Regio aboensis; municipality: Vihti; locality: Vihtijärvi; decimalLatitude: 60.523; decimalLongitude: 24.556; geodeticDatum: WGS84; eventDate: 1905; individualCount: 1; sex: male; recordedBy: R.Frey; identifiedBy: C.Lundström; institutionCode: MZHF

h. country: Finland; stateProvince: Alandia; locality: Jomala; decimalLatitude: 60.151; decimalLongitude: 19.948; geodeticDatum: WGS84; eventDate: 1905; habitat: herb-rich forest; individualCount: 1; sex: male; recordedBy: R.Frey; identifiedBy: C.Lundström; institutionCode: MZHF

i. country: Finland; stateProvince: Karelia borealis; municipality: Kitee; locality: Närsäkkälä; decimalLatitude: 61.918; decimalLongitude: 30.138; geodeticDatum: WGS84; eventDate: 1962-5; individualCount: 1; sex: male; recordedBy: W.Hackman; identifiedBy: W.Hackman; institutionCode: MZHF

j. country: Finland; stateProvince: Nylandia; municipality: Sipoo; locality: Hindsby, Gillerberget; decimalLatitude: 60.344; decimalLongitude: 25.191; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-7-6/7-16; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: P.Vilkamaa; identifiedBy: J.Jakovlev; institutionCode: JJH

k. country: Finland; stateProvince: Nylandia; municipality: Sipoo; locality: Hindsby, Gladerseker; decimalLatitude: 60.339; decimalLongitude: 25.218; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2005-7-21/7-25; habitat: old-growth forest, herb-rich type; individualCount: 2; sex: 1 male, 1 female; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

l. country: Finland; stateProvince: Regio aboënsis; municipality: Turku; locality: Ruissalo-1; decimalLatitude: 60.432; decimalLongitude: 22.165; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2005-7-13/8-27; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Jakovlev and G.Ståhls; identifiedBy: J.Jakovlev; institutionCode: JJH

m. country: Finland; stateProvince: Regio aboënsis; municipality: Turku; locality: Ruissalo-2; decimalLatitude: 60.432; decimalLongitude: 22.158; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2005-5-11/6-20; habitat: old-growth forest,

herb-rich type; individualCount: 1; sex: male; recordedBy: J.Jakovlev and G.Ståhls; identifiedBy: J.Jakovlev; institutionCode: JJH

n. country: Finland; stateProvince: Regio aboënsis; municipality: Karjalohja; locality: Karkali_North; decimalLatitude: 60.243; decimalLongitude: 23.797; geodeticDatum: WGS84; samplingProtocol: Reared from wood; eventDate: 2007-5-16/6-25; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: female; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

o. country: Finland; stateProvince: Nylandia; municipality: Kirkkonummi; locality: Kuokkamaa; decimalLatitude: 60.121; decimalLongitude: 24.608; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2010-6-17/7-13; habitat: old-growth forest, herb-rich type; individualCount: 2; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

p. country: Finland; stateProvince: Nylandia; municipality: Kirkkonummi; locality: Norra flaget; decimalLatitude: 60.113; decimalLongitude: 24.624; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2010-7-13/8-23; habitat: old-growth forest, herb-rich type; individualCount: 2; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

q. country: Finland; stateProvince: Regio aboënsis; municipality: Tammisaari; locality: Dragsvikin kartano; decimalLatitude: 60.001; decimalLongitude: 23.492; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2010-6-18/7-14; habitat: herb-rich forest, spruce dominated, huge willows.; individualCount: 1; sex: female; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

r. country: Finland; stateProvince: Regio aboënsis; municipality: Tammisaari; locality: Dragsvikin kartano; decimalLatitude: 60.001; decimalLongitude: 23.492; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2010-6-18/7-14; habitat: herb-rich forest, spruce dominated, huge willows; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

Distribution

European, wide range in Europe (Chandler 2004). Rather common in herb-rich forests in South Finland, no former records from Finnish Lapland.

Ecology

Immature stages are unknown, but adults have been reared from moss patches and exposed forest soil in Norway (Økland 1999) and from an aspen log bearing polypores (J. Jakovlev, unpublished). However, due to the methods used (eclector trap *in situ*), it can not be ruled out that adult specimens were already present in the substrate when the trap was set (Økland 1999). Congeneric species *G. apicalis* Meigen, 1818 has been reared from moss cushions around a seepage in Germany (Lenz 1927).

Syntemna penicilla Hutson, 1979**

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140711

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja; decimalLatitude: 67.835; decimalLongitude: 29.454; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-14/7-10; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2012-0032; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

b. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Paanajarvi, 4,5 km N of lake Pihlajarvi; decimalLatitude: 66.375; decimalLongitude: 30.367; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2001-6-11/14; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

c. country: Finland; stateProvince: Ostrobothnia kajanensis; municipality: Puolanka; locality: Paljakka Strict Nature Reserve; decimalLatitude: 64.744; decimalLongitude: 28.050; geodeticDatum: WGS84; samplingProtocol: reared from pine log, Eclector_trap; startDayOfYear: 2004-8-4/8-14; habitat: old-growth forest, Myrtillus type; individualCount: 2; sex: male; recordedBy: G.Varkonyi; identifiedBy: J.Jakovlev; institutionCode: JJH

d. country: Finland; stateProvince: Ostrobothnia kajanensis; municipality: Puolanka; locality: Paljakka Strict Nature Reserve; decimalLatitude: 64.744; decimalLongitude: 28.050; geodeticDatum: WGS84; samplingProtocol: Reared from wood; startDayOfYear: 2004-8-4/8-14; individualCount: 1; sex: male; recordedBy: G.Varkonyi; identifiedBy: J.Jakovlev; institutionCode: JJH

e. country: Finland; stateProvince: Regio kuusamoensis; verbatimLocality: Salla, Kuntasjoki, Värriö Strict Nature Reserve; verbatimElevation: 320 m; decimalLatitude: 67.749; decimalLongitude: 29.617; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2013; verbatimEventDate: 2013-6-4/29; habitat: headwater stream, old-growth boreal forest; individualCount: 2; sex: male; catalogNumber: MYCE-JS-2013-0397; recordedBy: J. Salmela; T. Hietajärvi; identifiedBy: J. Salmela; institutionCode: JES

Distribution

Fennoscandian. Only known from Finland (Hutson 1979, Polevoi 2003), Sweden (Kjaerandsen et al. 2007) and Norway (Søli and Rindal 2012). New to the Republic of Karelia and Russia.

Ecology

The Karelian specimen was collected in moist spruce dominated forest. Saproxylic, reared from a rotting pine log (Jakovlev 2011a).

Conservation

Red-listed in Finland (VU, Penttinen et al. 2010), associated with old-growth boreal forests.

Docosia expectata Laštovka & Ševčík, 2006*

- Catalogue of Life http://www.catalogueoflife.org/col/details/species/id/8763254

Material

a. country: Finland; stateProvince: Regio aboënsis; municipality: Turku; locality: Ruissalo; decimalLatitude: 60.434; decimalLongitude: 22.272; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2004-6-27/6-27; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: M.Jaschhof and C.Jaschhof; identifiedBy: J.Jakovlev; institutionCode: JJH

Distribution

European. Known from Czech Republic, Slovakia (Laštovka and Ševčík 2006), Great Britain (Hutson et al. 1980, as *Docosia* sp. indet), Sweden and Germany (Kurina et al. 2004, Kjaerandsen et al. 2007). New for Finland.

Ecology

The only Finnish record is from a herb-rich old-growth forest in the hemiboreal zone. Immature stages are unknown. Generally, *Docosia* larvae develope in a variety of microhabitats, including fungi, fungus infested wood, other vegetable matter and the nests of birds and mammals (Hutson et al. 1980).

Docosia flavicoxa Strobl, 1900

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140664

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; habitat: headwater stream, seminatural boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0118; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

b. country: Finland; stateProvince: Alandia; locality: Finström; decimalLatitude: 60.234; decimalLongitude: 19.984; geodeticDatum: WGS84; eventDate: 1900; individualCount: 1; sex: male; recordedBy: R.Frey; identifiedBy: J.Jakovlev; institutionCode: MZHF

Distribution

European species, known from Central Europe, British Isles (Laštovka and Ševčík 2006) and Fennoscandia (Kjaerandsen 2012). The only Finnish record is Hackman's (Hackman 1980) checklist, where the species was included with a question mark. Here we confirm two records from Finland (the localities are in the hemiboreal and north boreal zones).

Ecology

The collecting site in Savukoski (Fig. 5c), eastern Lapland, is a headwater stream surrounded by seminatural coniferous forest. Immature stages are unknown.

Docosia landrocki Laštovka & Ševčík, 2006*

- Catalogue of Life http://www.catalogueoflife.org/col/details/species/id/8763255

Materials

a. country: Finland; stateProvince: Nylandia; municipality: Helsinki; locality: Munkkiniemi; decimalLatitude: 60.205; decimalLongitude: 24.868; geodeticDatum: WGS84; eventDate: 1900; individualCount: 1; sex: male; recordedBy: R.Frey; identifiedBy: J.Jakovlev; institutionCode: MZHF

b. country: Finland; stateProvince: Nylandia; municipality: Helsinki; locality: Itäsalmi; decimalLatitude: 60.252; decimalLongitude: 25.204; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2010-6-15/7-23; habitat: herb-rich forest, dominated by aspen and spruce, plenty of young maple trees; individualCount: 3; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

Distribution

European, known from central and western Europe (Laštovka and Ševčík 2006). In Fennoscandia hitherto only known from Sweden (preliminary record, Kjaerandsen 2012), new for Finland. Finnish records are from southernmost Finland, hemiboreal zone.

Ecology

Collected from a herb-rich forest. Immature stages are unknown.

Docosia muelleri Plassmann, 1986*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140675

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja; decimalLatitude: 67.835; decimalLongitude: 29.454; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-10/8-16; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0195; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

b. stateProvince: Lapponia enontekiensis; municipality: Enontekiö; locality: Kilpisjärvi_Saana_North_3; decimalLatitude: 69.045; decimalLongitude: 20.807; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-8-1/8-15; habitat: mountain birch forest; individualCount: 1; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev

c. stateProvince: Lapponia enontekiensis; municipality: Enontekiö; locality: Kilpisjärvi_Saana_North_3; decimalLatitude: 69.045; decimalLongitude: 20.807; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-8-15/8-31; habitat: mountain birch forest; individualCount: 1; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev

d. stateProvince: Lapponia enontekiensis; municipality: Enontekiö; locality: Kilpisjärvi_Saana_South_1; decimalLatitude: 69.033; decimalLongitude: 20.838; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-6-19/7-14; habitat: mountain birch forest; individualCount: 1; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

e. stateProvince: Lapponia kemensis pars occidentalis; municipality: Muonio; locality: Pallas-Yllästunturi National Park; decimalLatitude: 67.587; decimalLongitude: 24.214; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-7-15/8-15; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev

Distribution

Palaearctic. *Docosia muelleri* (Fig. 18) is in Fennoscandia so far known only by the type material from northern Sweden (Plassmann 1986). No former records from Finland.

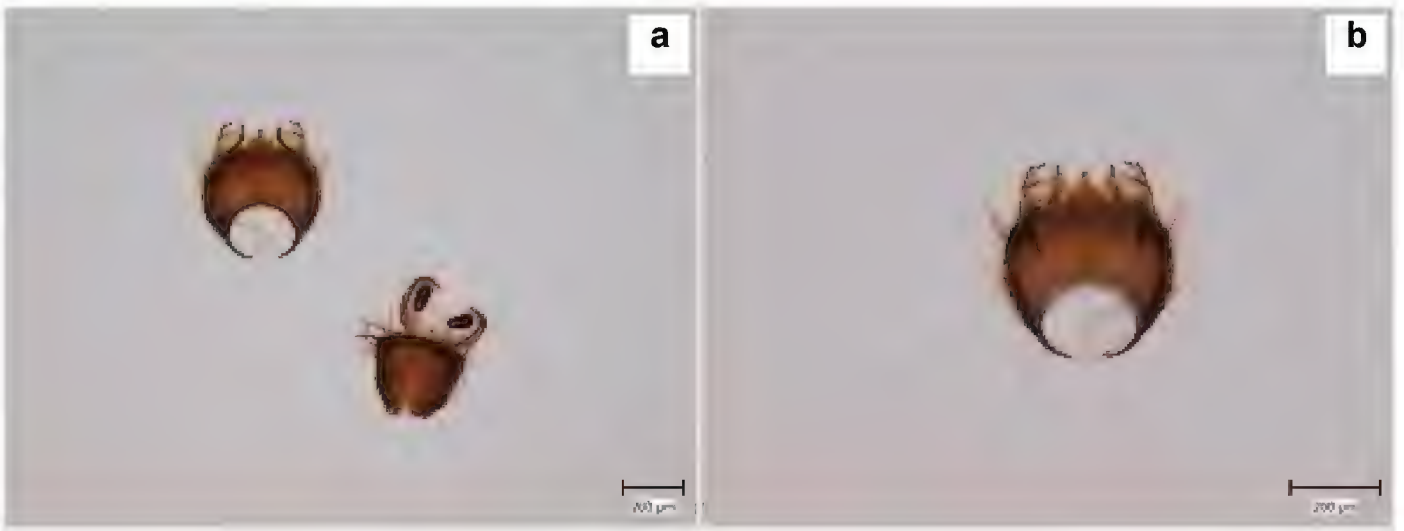

Figure 18.

Docosia muelleri Plassmann, male specimen collected from Finland, Savukoski (northeastern Lapland).

a: Male hypopygium, 9th tergite (top, dorsal view) and cerci (ventral view).
b: Male hypopygium, 9th tergite (ventral view).

Ecology

Current knowledge based on a few findings suggests a northern distribution. Finnish records are from subarctic mountain birch forest on the slopes of Saana mountain, from old-growth coniferous stands close to the timberline (Pallas-Yllästunturi National Park) and from riparian forests (Savukoski). Immature stages are unknown.

Taxon discussion

It was recently noted that *Docosia moravica* Landrock sensu Zaitzev (Zaitzev 1994, p. 254, Fig. 81: 9) most likely represents *D. muelleri* (Kurina and Ševčík 2012). We studied the holotype of *D. muelleri* (Sweden, Abisko) and specimens identified as *Docosia moravica* by A.Zaitzev (West Siberia: Nizhnyaya Tunguska and Norilsk) and can confirm that the species are identical. Male genitalia of real *D. moravica* were figured by Laštovka and Ševčík (Laštovka and Ševčík 2006) who studied Landrock's specimens and designated lectotype.

Docosia tibialis Laštovka & Ševčík, 2006*

- Catalogue of Life http://www.catalogueoflife.org/col/details/species/id/8763261

Material

a. country: Finland; stateProvince: Satakunta; municipality: Kokemäki; decimalLatitude: 61.254; decimalLongitude: 22.317; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 1953; individualCount: 1; sex: male; recordedBy: R.Tuomikoski; identifiedBy: J.Jakovlev; institutionCode: MZHF

Distribution

European. Described recently from Czech Republic and Italy (Laštovka and Ševčík 2006), and later recorded from Sweden (Kjaerandsen 2012) and northwest Russia (Polevoi 2010). New for Finland.

Ecology

Immature stages are unknown.

Greenomyia baikalica Zaitzev, 1994

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140656

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja; decimalLatitude: 67.835; decimalLongitude: 29.454; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-10/8-16; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0195; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

b. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-10/8-16; habitat: headwater stream, seminatural boreal forest; individualCount: 2; sex: 1 male, 1 female; catalogNumber: MYCE-JS-2013-0185; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

c. country: Finland; stateProvince: Ostrobothnia borealis pars borealis; verbatimLocality: Ylitornio, Tuorerommas; decimalLatitude: 66.478; decimalLongitude: 24.753; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-6/9-26; habitat: spring brook, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2012-0057; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

d. country: Finland; stateProvince: Regio kuusamoënsis; municipality: Kuusamo; locality: Kuohusuo-Kalliovaara; decimalLatitude: 65.674; decimalLongitude: 28.888; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2004-7-21/7-25; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: M.Jaschhof and C.Jaschhof; identifiedBy: J.Jakovlev; institutionCode: JJH

e. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Kotinen_Aspen part; decimalLatitude: 61.244; decimalLongitude: 25.067; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-8-28/10-4; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

f. country: Finland; stateProvince: Tavastia australis; municipality: Lammi; locality: Evo_Kotinen_Aspen part; decimalLatitude: 61.244; decimalLongitude: 25.067; geodeticDatum: WGS84; samplingProtocol: Rearing from wood; eventDate: 2006-6-28/8-2; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: female; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev; institutionCode: JJH

g. country: Finland; stateProvince: Tavastia australis; municipality: Muurame; locality: Kuusimäki Forest Reserve; decimalLatitude: 62.2125; decimalLongitude: 25.497; geodeticDatum: WGS84; samplingProtocol: Reared from wood; eventDate: 2007-7-27/8-27; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: Noora Vartija; identifiedBy: J.Penttinen; institutionCode: JPJ

h. country: Finland; stateProvince: Tavastia australis; municipality: Padasjoki; locality: Vesijako Strict Nature Reserve; decimalLatitude: 61.355; decimalLongitude: 25.106; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2008-8-18/8-18; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

i. country: Finland; stateProvince: Regio kuusamoensis; verbatimLocality: Salla, Kuntasjoki, Värriö Strict Nature Reserve; verbatimElevation: 320 m; decimalLatitude: 67.749; decimalLongitude: 29.617; geodeticDatum: WGS84; samplingProtocol: Malaise trap; verbatimEventDate: 2013-7-29/9-19; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: DIPT-JS-2014-0055; recordedBy: J. Salmela; T. Hietajärvi; identifiedBy: J. Salmela; institutionCode: JES

Distribution

Palaearctic. The species was described from Siberia, Buryatia (Zaitzev 1994) and has been subsequently found only from Fennoscandia (Polevoi 2000, Kjaerandsen et al. 2007, Kurina et al. 2011).

Ecology

Collected from seminatural or old-growth boreal forests, larvae are associated with saproxylic fungi (Zaitzev 1994). In Finland has been collected with an eclector trap over

aspen log bearing polypores *Phellinus tremulae* and *Trametes ochraceae* (J. Jakovlev, unpublished).

Conservation

Red-listed in Finland (VU, Penttinen et al. 2010) and Norway (VU, Anonymous 2010, Gammelmo et al. 2010).

Greenomyia mongolica Lastovka & Matile, 1974*

- Catalogue of Life http://www.catalogueoflife.org/col/details/species/id/8734367

Materials

a. country: Finland; stateProvince: Nylandia; municipality: Helsinki; locality: Herttoniemen kartanopuisto; decimalLatitude: 60.190; decimalLongitude: 25.042; geodeticDatum: WGS84; samplingProtocol: pit-fall trap inside a hollow lime tree (Tilia cordata); eventDate: 2006-7-6/7-19; habitat: old managed forest, herb-rich type; individualID: 1; individualCount: 1; sex: female; recordedBy: Elina Peuhu; identifiedBy: J.Jakovlev; institutionCode: JJH

b. country: Finland; stateProvince: Nylandia; municipality: Helsinki; locality: Tuomarinkylä; decimalLatitude: 60.262; decimalLongitude: 24.966; geodeticDatum: WGS84; samplingProtocol: bowl window trap; eventDate: 2006-7-4/7-18; habitat: Wood-storage areas in Helsinki; individualCount: 1; sex: male; recordedBy: Elina Peuhu; identifiedBy: J.Jakovlev; institutionCode: JJH

c. country: Finland; stateProvince: Nylandia; municipality: Helsinki; locality: Tuomarinkylä; decimalLatitude: 60.262; decimalLongitude: 24.966; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2011-6-5/7-4; habitat: Wood-storage areas in Helsinki; individualCount: 11; sex: 7 males, 4 females; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

d. country: Finland; stateProvince: Nylandia; municipality: Helsinki; locality: Tuomarinkylä; decimalLatitude: 60.262; decimalLongitude: 24.966; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2011-7-5/7-20; habitat: Wood-storage areas in Helsinki; individualCount: 33; sex: 21 males, 12 females; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

e. country: Finland; stateProvince: Nylandia; municipality: Helsinki; locality: Tuomarinkylä; decimalLatitude: 60.262; decimalLongitude: 24.966; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2011-7-5/7-20; habitat: Wood-storage areas in Helsinki; individualCount: 14; sex: 10 males, 4 females; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

f. country: Finland; stateProvince: Nylandia; municipality: Helsinki; locality: Tuomarinkylä; decimalLatitude: 60.262; decimalLongitude: 24.966; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2011-7-5/7-20; habitat: Wood-storage areas in Helsinki; individualCount: 17; sex: 8 males, 9 females; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

g. country: Finland; stateProvince: Nylandia; municipality: Helsinki; locality: Tuomarinkylä; decimalLatitude: 60.262; decimalLongitude: 24.966; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2011-7-5/7-20; habitat: Wood-storage areas in Helsinki; individualCount: 8; sex: 4 males, 4 females; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

Distribution

Palaearctic. *Greenomyia mongolica* (Fig. 19) is known from Mongolia (Laštovka and Matile 1974), Russia (Zaitzev 1994), Estonia, southern and central Europe (Chandler 2004, as *G. theresae* Matile, 2002, Kurina et al. 2011), Spain (Chandler and Camaño Portela 2011) and Britain (Chandler 2008). In Nordic countries collected from the southern parts of Sweden and Norway (Soli et al. 2009, Anonymous 2010, Kurina et al. 2011). No previous findings from Finland.

Figure 19.

Greenomyia mongolica Lastovka & Matile, male specimen collected from Finland, lateral view.

Ecology

Larvae are saproxylic, apparently feeding on mycelia in decaying wood (Zaitzev 1994). Finnish specimens were collected in wood-storage areas in the city parks of Helsinki. Interestingly, a related species, *G. stackelbergi* Zaitzev was also found only in semi-urban habitats in Norway and Sweden; in Sweden the larvae had probably developed in a garden compost in which fungal fruiting bodies were regularly discarded by the mycologist M. Karström (Søli and Kjaerandsen 2008).

Leia longiseta Barendrecht, 1938*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140637

Material

a. country: Finland; stateProvince: Nylandia; municipality: Espoo; locality: Matalajärvi; decimalLatitude: 60.247; decimalLongitude: 24.687; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-5-9/10-20; habitat: swampy lake shore; individualCount: 73; sex: 53 males, 20 females; catalogNumber: MYCE-JS-2013-0270; recordedBy: J. Ilmonen; otherCatalogNumbers: MYCE-JS-2013-0284; identifiedBy: J. Salmela; institutionCode: JES

Distribution

European. A rare and poorly known species, so far only known from the Netherlands (Barendrecht 1938), Great Britain (Chandler 1992), Norway (Anonymous 2010) and Germany (Plassmann 1988). The first record from the Baltic sea catchment area, new for Finland.

Ecology

Finnish sampling locality is a swampy lake shore with luxuriant vegetation. Collecting sites reported by Chandler (Chandler 1992) are wetlands and the only known Norwegian locality is a lake shore wetland (Anonymous 2010). Relatively long flying period, specimens were caught between May and October. However, 60 % of the caught specimens were trapped between 23rd of August - 20th of October. Larval habitats are unknown. Generally, *Leia* larvae spin a slimy web on the under surface of fungi and dead wood (Jakovlev 2011a). In addition, some species have been reared from the nests of birds and mammals (Falk and Chandler 2005) and from tussocks of grasses and sedges (Ševčík and Roháček 2008).

Conservation

Red-listed in Norway (VU, Anonymous 2010, Gammelmo et al. 2010).

Allodia (*Brachycampta*) *bohemica* Ševčík, 2004**

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=304273

Material

a. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Pin'guba; decimalLatitude: 61.865; decimalLongitude: 34.556; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2007-6-17; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

Distribution

European. This species was known only from type locality in Czech Republic (Ševčík 2004). New to the Republic of Karelia, Russia, and Fennoscandia.

Ecology

Immature stages of this rare species are unknown. Generally, *Allodia* species for which rearing records exist are associated with fruiting bodies of soft macrofungi, chiefly agarics. Some *Allodia* species within the subgenus *Brachycampta* colonize ascomycete fungi of the order Pezizales (Jakovlev 1994, Jakovlev 2012).

Allodia (*Brachycampta*) *huggerti* Kjaerandsen, 2007*

- Catalogue of Life http://www.catalogueoflife.org/col/details/species/id/8762838

Material

a. country: Finland; stateProvince: Nylandia; municipality: Espoo; locality: Matalajärvi; decimalLatitude: 60.247; decimalLongitude: 24.687; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-23/10-20; habitat: swampy lake shore; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0296; recordedBy: J. Ilmonen; identifiedBy: J. Salmela; institutionCode: JES

Distribution

Fennoscandian. *Allodia huggerti* (Fig. 20) is a recently described species, hitherto only known from the type locality in South Sweden (Kjaerandsen 2007). New for Finland.

Figure 20.

Allodia (Brachycampta) huggerti Kjaerandsen, male specimen collected from South Finland, Espoo. Male gonostylus, lateral view.

Ecology

Immature stages are unknown.

Allodia (*Brachycampta*) *penicillata* (Lundström, 1912)

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=140064

Materials

a. country: Finland; stateProvince: Karelia borealis; verbatimLocality: Ilomantsi, Kotavaara; decimalLatitude: 63.029; decimalLongitude: 31.377; geodeticDatum: WGS84;

samplingProtocol: Malaise trap; eventDate: 1998-6-11/15; individualCount: 2; sex: male; recordedBy: M. Tietäväinen; identifiedBy: A. Polevoi; institutionCode: FRIP

b. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-14/7-10; habitat: headwater stream, seminatural boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0189; recordedBy: J. Salmela; identifiedBy: J. Salmela; J. Jakovlev; institutionCode: JES

c. country: Finland; stateProvince: Regio kuusamoensis; verbatimLocality: Salla, Kuntasjoki, Värriö Strict Nature Reserve; verbatimElevation: 320 m; decimalLatitude: 67.749; decimalLongitude: 29.617; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2013; verbatimEventDate: 2013-6-4/29; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: DIPT-JS-2014-0010; recordedBy: J. Salmela; T. Hietajärvi; identifiedBy: J. Salmela; institutionCode: JES

Distribution

European, known from Finland (as *Brachycampta penicillata*, Lundström 1912b), Russian Karelia (Polevoi 2000) and Latvia (Lackschewitz 1937). Very rare species, in Finland hitherto only recorded from the type locality in NW Lapland, Muonio (R. Frey leg. 1911, Lundström 1912b).

Ecology

Collected in *Vaccinium myrtillus* type spruce dominated forests and from riparian forests. Immature stages are unknown.

Allodia (*Brachycampta*) *subpistillata* Ševčík, 1999

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140073

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; habitat: headwater stream, seminatural boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0123; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

b. country: Finland; stateProvince: Nylandia; municipality: Espoo; locality: Matalajärvi; decimalLatitude: 60.247; decimalLongitude: 24.687; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-23/10-20; habitat: swampy lake shore; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0294; recordedBy: J. Ilmonen; identifiedBy: J. Salmela; institutionCode: JES

c. country: Finland; stateProvince: Nylandia; municipality: Espoo; locality: Matalajärvi; decimalLatitude: 60.247; decimalLongitude: 24.687; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-16/7-21; habitat: swampy lake shore; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0311; recordedBy: J. Ilmonen; identifiedBy: J. Salmela; institutionCode: JES

Distribution

European. The species was described from Czech Republic (Ševčík 1999), and has been recorded from Sweden (north, south, Kjaerandsen et al. 2007), Russian Karelia (Polevoi 2000) and Finland (south). Here reported from North Finland.

Ecology

Sampling sites are a headwater stream and a swampy lake shore. Immature stages are unknown. Related species *Allodia (Brachycampta) pistillata* Lundström was reared by Jakovlev (Jakovlev 1994) from the ascomycete fungus *Peziza sp.*

Allodiopsis korolevi Zaitzev, 1982*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140029

Material

a. country: Finland; stateProvince: Alandia; municipality: Sund; decimalLatitude: 60.250; decimalLongitude: 20.108; geodeticDatum: WGS84; eventDate: 1900; individualCount: 1; sex: male; recordedBy: R.Frey; identifiedBy: J.Jakovlev; institutionCode: MZHF

Distribution

Palaearctic. Known from European and Asian parts of Russia (Zaitzev 2003), Great Britain, Switzerland and Romania (Chandler 2004). New for Finland.

Ecology

Immature stages are unknown. The larval microhabitats of *Allodiopsis* species are quite similar to those of *Allodia.* Some species colonise also Lycoperdales (Ševčík 2010, Jakovlev 2011a).

Anatella bremia Chandler, 1994

- Fauna europaea http://www.faunaeur.org/full_results.php?id=139996

Materials

a. country: Russia; stateProvince: Leningrad province; verbatimLocality: Voznesenje, 1 km E of Gimreka; decimalLatitude: 61.151; decimalLongitude: 35.64; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008-4-23/5-25; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

b. country: Finland; stateProvince: Nylandia; municipality: Espoo; locality: Matalajärvi; decimalLatitude: 60.247; decimalLongitude: 24.687; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-21/8-23; habitat: swampy lake shore; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0332; recordedBy: J. Ilmonen; identifiedBy: J. Salmela; institutionCode: JES

Distribution

European. Described from Great Britain (Chandler 1994) and later found from Norway (Anonymous 2010), Sweden (Kjaerandsen et al. 2007), Germany (Chandler 2004), Russia (Polevoi 2000, Zaitzev 2003) and Finland. In Finland recorded only once before, from the eastern part of the country (Karelia borealis, Polevoi 2001).

Ecology

In Britain the species is associated with wet meadows and peatlands (Falk and Chandler 2005). Finnish sampling sites are an abandoned field (Polevoi 2001) and a swampy lake shore (Matalajärvi). Karelian records are from *Cladonia* type pine forest and secondary *Vaccinium myrtillus* type pine dominated forest. Immature stages are unknown. The larval biology of *Anatella* is mostly unknown, the few known associations are with ascomycetes or other small wood-decay fungi (Alexander 2002, Ševčík 2010).

Brevicornu arcticum (Lundström, 1913)*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=139931

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; habitat: headwater stream, seminatural boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0078; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

b. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja; decimalLatitude: 67.835; decimalLongitude: 29.454; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-10/8-16; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0041; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

c. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja; decimalLatitude: 67.835; decimalLongitude: 29.454; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0156; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

d. country: Finland; stateProvince: Regio kuusamoensis; verbatimLocality: Salla, Kuntasjoki, Värriö Strict Nature Reserve; verbatimElevation: 320 m; decimalLatitude: 67.749; decimalLongitude: 29.617; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2013; verbatimEventDate: 2013-6-4/29; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: DIPT-JS-2014-0028; recordedBy: J. Salmela; T. Hietajärvi; identifiedBy: J. Salmela; institutionCode: JES

Distribution

Holarctic, known from arctic Russia (Kanin Peninsula, as *Brachycampta arctica*, Lundström and Frey 1913), Russian Karelia and Murmansk region (Polevoi 2000, Polevoi 2010), Ireland (Chandler 1977), Central Europe (Chandler 2004) and USA (Zaitzev 1988). In the Nordic countries recorded from Sweden and Norway (Kjaerandsen 2012). Perhaps a boreo-montane species (Kjaerandsen et al. 2007). New for Finland.

Ecology

Finnish sampling localities are headwater streams surrounded by pristine or seminatural boreal forests. Immature stages are unknown. In their larval habitats, *Brevicornu* do not resemble closely related species of *Allodia.* At least some *Brevicornu* species develop in dead wood and in soil litter, feeding probably on microfungi (Jakovlev 2011a).

Brevicornu auriculatum (Edwards, 1925)*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=139932

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja; decimalLatitude: 67.835; decimalLongitude: 29.454; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0158; recordedBy: J. Salmela; identifiedBy: J. Salmela, A. Polevoi; institutionCode: JES

b. country: Finland; stateProvince: Lapponia enontekiensis; municipality: Enontekiö; locality: Kilpisjärvi_Saana_South_2; decimalLatitude: 69.035; decimalLongitude: 20.839; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-8-1/8-15; habitat: subarctic; individualCount: 2; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev

c. country: Finland; stateProvince: Lapponia enontekiensis; municipality: Enontekiö; locality: Kilpisjärvi_Saana_North_4; decimalLatitude: 69.045; decimalLongitude: 20.808; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-7-15/8-1; habitat: subarctic; individualCount: 1; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev

Distribution

Palaearctic. Rather widespread in Europe (Chandler 2004), also recorded from the Russian Far East (Kuril Islands, Zaitzev 2003), but so far not recorded from other parts of Russia. In the Nordic countries recorded from Sweden, Norway, Iceland and Denmark (Kjaerandsen 2012, Søli and Rindal 2012). Here reported for the first time from Finland.

Ecology

Immature stages are unknown. Finnish collecting sites are located in Lapland, Savukoski (north boreal zone, riparian forest) and Kilpisjärvi (subarctic zone, mountain birch forest).

Brevicornu cognatum Ostroverkhova, 1979*

- Catalogue of Life http://www.catalogueoflife.org/col/details/species/id/8698225

Materials

a. country: Finland; stateProvince: Nylandia; municipality: Espoo; locality: Matalajärvi; decimalLatitude: 60.247; decimalLongitude: 24.687; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-23/10-20; habitat: swampy lake shore; individualCount: 2; sex: male; catalogNumber: MYCE-JS-2013-0290; recordedBy: J. Ilmonen; otherCatalogNumbers: MYCE-JS-2013-0308; identifiedBy: J. Salmela; institutionCode: JES

b. country: Finland; stateProvince: Lapponia kemensis pars orientalis; municipality: Savukoski; locality: Törmäoja, Ahot; decimalLatitude: 67.827; decimalLongitude: 29.437; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2013-8-7/9-19; habitat: Carex swamp; individualCount: 2; sex: male; catalogNumber: MYCE-JS-2013-0358; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

c. country: Finland; stateProvince: Lapponia enontekiensis; municipality: Enontekiö; locality: Kilpisjärvi_Saana_South_1; decimalLatitude: 69.033; decimalLongitude: 20.838; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-6-19/7-15; habitat: Subarctic; individualCount: 1; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

d. country: Finland; stateProvince: Tavastia australis; municipality: Hämeenlinna; locality: Tenhola; decimalLatitude: 60.980; decimalLongitude: 23.718; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-6-15/8-15; habitat: old managed forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

e. country: Finland; stateProvince: Regio aboënsis; municipality: Salo; locality: Märy; decimalLatitude: 60.223; decimalLongitude: 22.905; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-6-1/6-15; habitat: old managed forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

f. country: Finland; stateProvince: Regio aboënsis; municipality: Salo; locality: Märy; decimalLatitude: 60.223; decimalLongitude: 22.905; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-8-15/9-15; habitat: old managed forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

Distribution

Palaearctic. Described from Western Siberia (Ostroverkhova 1979) and later recorded only from southern Sweden (Kurina et al. 2004, Kjaerandsen et al. 2007). A record from Germany (Plassmann and Schacht 2002) is incorrect (Kjaerandsen et al. 2007). Here

reported formally for the first time from Finland; the records presented here are from the hemiboreal, south boreal, north boreal and subarctic zones.

Ecology

In Finland collected from swamps, herb-rich forests and from a subarctic mountain birch forest. Immature stages are unknown.

Conservation

Included in the Finnish Red List (DD, Penttinen et al. 2010), but reported here formally as a new species for Finland.

Brevicornu glandis Lastovka & Matile, 1974*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=139946

Material

a. country: Finland; stateProvince: Nylandia; municipality: Espoo; locality: Matalajärvi; decimalLatitude: 60.247; decimalLongitude: 24.687; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-21/8-23; habitat: swampy lake shore; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0328; recordedBy: J. Ilmonen; identifiedBy: J. Salmela; institutionCode: JES

Distribution

Palaearctic. Described from Mongolia (Laštovka and Matile 1974) and later found from Europe, including Germany (Caspers 1987), British Isles (Chandler 2001), Czech Republic, France (Chandler 2004) and Sweden (Kjaerandsen 2012). New for Finland.

Ecology

Immature stages are unknown. The Finnish collecting site is a swampy shore of a shallow, eutrophic lake.

Brevicornu rosmellitum Chandler, 2001*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=139967

Material

a. country: Finland; stateProvince: Regio kuusamoensis; verbatimLocality: Salla, Kuntasjoki, Värriö Strict Nature Reserve; verbatimElevation: 320 m; decimalLatitude: 67.749; decimalLongitude: 29.617; geodeticDatum: WGS84; samplingProtocol: Malaise trap; verbatimEventDate: 2013-6-29/7-29; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: DIPT-JS-2014-0038; recordedBy: J. Salmela; T. Hietajärvi; identifiedBy: J. Salmela; institutionCode: JES

Distribution

Holarctic. The species was described from England and Nearctic non-type material studied by Zaitzev (Zaitzev 1988, as *B. nigrofuscum*, from USA and Canada) actually represents *B. rosmellitum* (Chandler 2001). New for Finland.

Ecology

Immature stages are unknown. The British type specimens, five males, were taken from honey dew (Chandler 2001). The Finnish collecting site is a headwater stream surrounded by old-growth boreal forest.

Brevicornu setulosum Zaitzev, 1988

- Fauna europaea http://www.faunaeur.org/full_results.php?id=139977

Materials

a. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-16/9-18; habitat: headwater stream, seminatural boreal forest; individualCount: 2; sex: male; catalogNumber: MYCE-JS-2013-0027; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

b. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Joutenoja; decimalLatitude: 67.821; decimalLongitude: 29.440; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-10/8-16; habitat: headwater stream, seminatural boreal forest; individualCount: 3; sex: male; catalogNumber: MYCE-JS-2013-0087; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

c. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Taljavaaranvuoma; decimalLatitude: 67.578; decimalLongitude: 25.358; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-6-25/7-24; habitat: Rich fen; individualCount: 1; sex: male; catalogNumber: MYCE-NV-2013-0033; recordedBy: J. Salmela; identifiedBy: N. Vartija; institutionCode: JES

d. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Silmäsvuoma; decimalLatitude: 67.582; decimalLongitude: 25.543; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-5-31/6-25; habitat: Rich fen; individualCount: 1; sex: male; recordedBy: J. Salmela; identifiedBy: N. Vartija

e. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Kielisenpalo; decimalLatitude: 68.020; decimalLongitude: 25.063; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-8-1/31; habitat: Rich spring fen; individualCount: 1; sex: male; catalogNumber: MYCE-NV-2013-0082; recordedBy: J. Salmela; identifiedBy: N. Vartija; institutionCode: JES

f. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Sodankylä, Ylä-Postojoki; decimalLatitude: 67.851; decimalLongitude: 26.481; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-6-1/29; habitat: riparian forest; individualCount: 1; sex: male; recordedBy: J. Salmela; identifiedBy: N. Vartija

g. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; verbatimLocality: Kittilä, Vielmakoskenpalo; decimalLatitude: 68.008; decimalLongitude: 25.046; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-8-1/31; habitat: Rich fen; individualCount: 1; sex: male; recordedBy: J. Salmela; identifiedBy: N. Vartija

Distribution

Holarctic. Known from eastern Siberia (Lena River, holotype), USA (Coeur d'Alene, paratype) (Zaitzev 1988), NW Russia (Polevoi 2000, Polevoi 2010), Finland (Polevoi 2001b) and Sweden (north, Kjaerandsen et al. 2007). In Finland hitherto collected only from a locality in the eastern part of the country (Ilomantsi). Here reported from Finnish Lapland, north boreal zone.

Ecology

Finnish collecting sites are an abandoned field (Polevoi 2001b), riparian forests and rich fens. Immature stages are unknown.

Brevicornu spathulatum (Lundström, 1911)*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=139978

Material

a. country: Finland; stateProvince: Regio aboënsis; municipality: Salo; locality: Roomunmäki; decimalLatitude: 60.324; decimalLongitude: 23.665; geodeticDatum: WGS84; samplingProtocol: Malaise; eventDate: 2009-8-15/9-15; habitat: seminatural herb-rich forest; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

Distribution

Palaearctic. Described from Hungary (as *Brachycampta spathulata*, Lundström 1911), later recorded from Bulgaria, Romania, Czech Republic (Chandler 2004) and from Altai Mountains, Western Siberia (Zaitzev 2003). In the Nordic Region recorded from Sweden (Kjaerandsen 2012). No former records from Finland.

Ecology

The Finnish sampling locality is a herb-rich forest. Immature stages are unknown.

Brevicornu verralli (Edwards, 1925)*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=139980

Materials

a. stateProvince: Lapponia enontekiensis; municipality: Enontekiö; locality: Kilpisjärvi_Saana_North_4; decimalLatitude: 69.045; decimalLongitude: 20.808; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2006-6-21/6-21; habitat: subarctic mountain birch forest; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

b. stateProvince: Lapponia kemensis pars occidentalis; municipality: Kittilä; locality: Pallas-Yllästunturi National Park; decimalLatitude: 68.024; decimalLongitude: 24.150; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-7-15/8-14; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J.Jakovlev; J.Penttinen; identifiedBy: J.Jakovlev

c. stateProvince: Savonia australis; municipality: Rantasalmi; locality: Linnansaari; decimalLatitude: 62.116; decimalLongitude: 28.477; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008-6-24/7-25; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

Distribution

Palaearctic. Widely distributed in Europe (Chandler 2004), also in North Europe: Iceland, Norway, Sweden, Russian Karelia and Murmansk region (Kjaerandsen 2012). No former records from Finland.

Ecology

Immature stages are unknown. Finnish collecting sites are a mountain birch forest, an old-growth boreal forest and a herb-rich forest.

Exechia borealis Lundström, 1912

Materials

a. stateProvince: Lapponia enontekiensis; municipality: Enontekiö; locality: Palojoensuu; decimalLatitude: 68.285; decimalLongitude: 23.095; geodeticDatum: WGS84; eventDate: 1911-7-20/7-20; habitat: subarctic; individualCount: 1; sex: male; recordedBy: R.Frey; identifiedBy: C.Lundström; institutionCode: MZHF

b. stateProvince: Lapponia kemensis pars occidentalis; municipality: Muonio; locality: Olostunturi; decimalLatitude: 67.923; decimalLongitude: 23.801; geodeticDatum: WGS84; eventDate: 1911-8-1; individualCount: 2; sex: 1 male, 1 female; recordedBy: R.Frey; identifiedBy: C.Lundström; institutionCode: MZHF

c. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; municipality: Muonio; locality: Pallastunturi; decimalLatitude: 68.072; decimalLongitude: 24.068; geodeticDatum: WGS84; eventDate: 1911-6-22; individualCount: 2; sex: male; recordedBy: R.Frey; identifiedBy: C.Lundström; institutionCode: MZHF

d. stateProvince: Lapponia enontekiensis; municipality: Enontekiö; locality: Kilpisjärvi_Saana_North_4; decimalLatitude: 69.045; decimalLongitude: 20.808; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-7-15/8-1; habitat: subarctic; individualCount: 1; sex: male; recordedBy: J.Jakovlev; J.Penttinen; identifiedBy: J.Jakovlev; institutionCode: JJH

Distribution

European. This species was recently reinstated as separate from *E. spinuligera* Lundström, 1912 (lectotype from Enontekiö, Palojoki, Kjaerandsen et al. 2007a); before that it has been overlooked and confused with *E. frigida* (Boheman) in Europe (Chandler and Perry 2010). In the Nordic Region known from Iceland, Norway, Sweden and Finland (Kjaerandsen et al. 2007a).

Ecology

Immature stages are unknown.

Exechia micans Lastovka & Matile, 1974*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=139867

Material

a. country: Finland; stateProvince: Lapponia enontekiensis; municipality: Enontekiö; locality: Siilastupa; decimalLatitude: 69.047; decimalLongitude: 20.900; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 1963-6-23/6-23; habitat: subarctic; individualCount: 1; sex: male; recordedBy: K.Mikkola; identifiedBy: J.Kjaerandsen; institutionCode: MZHF

Distribution

Palaearctic. Described from Mongolia (Laštovka and Matile 1974), later recorded only from Germany (Chandler 2004), Russian Karelia (Zaitzev 2003), Murmansk region (Polevoi 2010), Iceland (Kjaerandsen et al. 2007a), Norway (Søli and Kjaerandsen 2008) and Sweden (Kjaerandsen et al. 2007). No former records from Finland.

Ecology

Immature stages are unknown. Mainly collected from northern areas. This species was recorded as widespread and common in Iceland (Kjaerandsen et al. 2007a), and occurs also in Greenland (G. Varkonyi, pers.comm).

Exechia styriaca Strobl, 1898**

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=139893

Material

a. country: Russia; stateProvince: Leningrad province; verbatimLocality: Voznesenje, Gimreka; decimalLatitude: 61.153; decimalLongitude: 35.618; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2007-6-2; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

Distribution

Palaearctic. Scattered records from Europe and Altai (Chandler 2004, Zaitzev 2003). In Fennoscandia known from Finland (Hackman 1980), Norway (Søli and Kjaerandsen 2008) and Sweden (Kjaerandsen et al. 2007). New to the Republic of Karelia.

Ecology

Immature stages are unknown. The Karelian specimen was collected in a herb-rich birch dominated forest.

Exechiopsis (*Exechiopsis*) *distendens* (Lackschewitz, 1937)

- Fauna europaea http://www.faunaeur.org/full_results.php?id=139780

Materials

a. country: Russia; stateProvince: Leningrad province; verbatimLocality: Voznesenje, 1 km E of Gimreka; decimalLatitude: 61.151; decimalLongitude: 35.64; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008-8-27/10-1; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

b. country: Finland; stateProvince: Nylandia; municipality: Espoo; locality: Matalajärvi; decimalLatitude: 60.247; decimalLongitude: 24.687; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-21/8-23; habitat: swampy lake shore; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0323; recordedBy: J. Ilmonen; identifiedBy: J. Salmela; institutionCode: JES

c. country: Finland; stateProvince: Nylandia; municipality: Espoo; locality: Westend; decimalLatitude: 60.159; decimalLongitude: 24.799; geodeticDatum: WGS84; eventDate: 1962; individualCount: 1; sex: male; recordedBy: W.Hackman; identifiedBy: J.Kjaerandsen; institutionCode: MZHF

d. country: Finland; stateProvince: Nylandia; municipality: Helsinki; locality: Vuosaari; decimalLatitude: 60.218; decimalLongitude: 25.157; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 1962; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: R.Tuomikoski; identifiedBy: J.Kjaerandsen; institutionCode: MZHF

e. country: Finland; stateProvince: Regio aboënsis; municipality: Vihti; locality: Vihtijärvi; decimalLatitude: 60.523; decimalLongitude: 24.556; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 1962-5-19/5-19; individualCount: 1; sex: male; recordedBy: R.Tuomikoski; identifiedBy: J.Kjaerandsen; institutionCode: MZHF

f. country: Finland; stateProvince: Karelia australis; municipality: Punkasalmi; locality: Punkasalmi; decimalLatitude: 61.763; decimalLongitude: 29.402; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 1963; individualCount: 1; sex: male; recordedBy: R.Tuomikoski; identifiedBy: J.Kjaerandsen; institutionCode: MZHF

g. country: Finland; stateProvince: Regio kuusamoënsis; municipality: Kuusamo; locality: Iivaara; decimalLatitude: 65.797; decimalLongitude: 29.684; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 1964-6-23/6-23; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: R.Tuomikoski; identifiedBy: J.Kjaerandsen; institutionCode: MZHF

h. country: Finland; stateProvince: Regio kuusamoënsis; municipality: Kuusamo; locality: Jäkälävuoma; decimalLatitude: 66.258; decimalLongitude: 29.444; geodeticDatum:

WGS84; samplingProtocol: Sweep netting; eventDate: 1964-6-24/6-24; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: R.Tuomikoski and K.Mikkola; identifiedBy: J.Kjaerandsen; institutionCode: MZHF

i. country: Finland; stateProvince: Karelia borealis; municipality: Pielisjärvi; locality: Koli_old; decimalLatitude: 63.120; decimalLongitude: 29.791; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 1964; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: R.Tuomikoski; identifiedBy: J.Kjaerandsen; institutionCode: MZHF

j. country: Finland; stateProvince: Karelia borealis; municipality: Tohmajärvi; locality: Hiidenvaara; decimalLatitude: 62.203; decimalLongitude: 30.629; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 1965; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: R.Tuomikoski; identifiedBy: J.Kjaerandsen; institutionCode: MZHF

k. country: Finland; stateProvince: Tavastia australis; municipality: Urjala; locality: Urjala; decimalLatitude: 60.180; decimalLongitude: 23.662; geodeticDatum: WGS84; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: T.Brander; identifiedBy: J.Kjaerandsen; institutionCode: MZHF

Distribution

Palaearctic. Widely distributed (Chandler 2004, Zaitzev 2003). In Fennoscandia recorded from Finland (Hackman 1980), Norway (Gammelmo and Søli 2006) and Sweden (Kjaerandsen et al. 2007). In the Republic of Karelia it was only known from the Kivach Nature Reserve (Zaitzev 2003).

Ecology

Most of the specimens were collected in coniferous forests. Immature stages are unknown. The host range of *Exechiopsis* includes fruiting bodies of soft terrestrial fungi, and also some wood-encrusting fungi (Jakovlev 2011a).

Conservation

Red-listed in Finland (NT, Penttinen et al. 2010).

Exechiopsis (*Exechiopsis*) *hammi* (Edwards, 1925)

- Fauna europaea http://www.faunaeur.org/full_results.php?id=139789

Material

a. country: Finland; stateProvince: Nylandia; municipality: Espoo; locality: Matalajärvi; decimalLatitude: 60.247; decimalLongitude: 24.687; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-23/10-20; habitat: swampy lake shore; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0295; recordedBy: J. Ilmonen; identifiedBy: J. Salmela; institutionCode: JES

Distribution

Palaearctic, rather widely distributed in Europe (Chandler 2004). In Fennoscandia recorded from Sweden, Norway, Finland and Russian Karelia (Hackman 1980, Polevoi 2000, Zaitzev 2003, Kjaerandsen et al. 2007). In Finland only known from the southern parts of the country.

Ecology

Immature stages are unknown, hibernating adults have been observed in caves in Norway (Kjaerandsen 1993). In Finland collected from old-growth forests, burnt forests, herb-rich forests and from a swampy lake shore (Matalajärvi).

Conservation

Red-listed (NT) in Finland (Penttinen et al. 2010).

Exechiopsis (*Xenexechia*) *davatchii* Matile, 1969**

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=139817

Material

a. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Shun'ga, Turastamozero; decimalLatitude: 62.56; decimalLongitude: 34.706; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-21/8-24; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

Distribution

Palaearctic. Widespread in western Europe (Chandler 2004) and has recently been recorded from Britain (Chandler and Perry 2010). Scattered records from the Near East and East Russia (Zaitzev 2003, Chandler 2004, Kurina and Ševčík 2006). In Fennoscandia recorded from South Finland (Jakovlev et al. 2006) and Sweden (Kjaerandsen et al. 2007). New to the Republic of Karelia.

Ecology

The Karelian specimen was collected in *Vaccinium myrtillus* type pine dominated forest.

Pseudexechia parallela (Edwards, 1925)*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=139762

Material

a. country: Finland; stateProvince: Nylandia; municipality: Espoo; locality: Matalajärvi; decimalLatitude: 60.247; decimalLongitude: 24.687; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-8-23/10-20; habitat: swampy lake shore; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0315; recordedBy: J. Ilmonen; identifiedBy: J. Salmela; institutionCode: JES

Distribution

Holarctic. Widely distributed in Europe, in Fennoscandia known from Sweden (Kjaerandsen 2009). The specimen recorded from Russian Karelia (Polevoi 2000) in fact belongs to *P. pectinacea* Ostroverkhova. Most likely the species is quite rare in Northern Europe, its range seems to be confined to nemoral - hemiboreal vegetation zones (cf. Kjaerandsen 2009). New for Finland, here reported from the hemiboreal vegetation zone.

Ecology

Immature stages are unknown, but several British collecting localities are wetlands (Kjaerandsen 2009). In Finland the species was trapped from a swampy lake shore (Matalajärvi).

Rymosia pinnata Ostroverkhova, 1979**

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=139727

Materials

a. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Ladvozero, Haapavaara; decimalLatitude: 64.853; decimalLongitude: 29.897; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2012-9-13; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

b. country: Russia; stateProvince: Murmansk province; verbatimLocality: Kutsa, near lake Pyhäjarvi; decimalLatitude: 66.714; decimalLongitude: 29.968; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2010-6-2; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

Distribution

Palaearctic. Described from West Siberia and Russian Far East (Ostroverkhova 1979). In Europe was known only from Finland (Polevoi et al. 2006) and Sweden (Kjaerandsen et al. 2007). New to the Republic of Karelia and Murmansk Province.

Ecology

Immature stages are unknown. All existing rearing records of *Rymosia* species are from fruiting bodies of soft macrofungi (Jakovlev 1994, Ševčík 2010). Specimens from

Karelia and Murmansk Province were collected in *Vaccinium myrtillus* type coniferous forests.

Synplasta bayardi Matile, 1971*

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=139672

Material

a. country: Finland; stateProvince: Tavastia australis; municipality: Luopioinen; locality: Kuohijoen kalkkilehto; decimalLatitude: 61.307; decimalLongitude: 24.874; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-4-29/6-10; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

Distribution

European. Very rare species, described from France (as *Allodiopsis bayardi*, Matile 1971) and found later from Central Europe (Chandler 2004), Russian Karelia (Polevoi 2000) and Sweden (Kjaerandsen et al. 2007). Included in the Red List of Finnish species, here reported formally for the first time from Finland.

Ecology

Immature stages are unknown. Based on the ecology of related genera, the larvae of *Synplasta* probably develop in soft macrofungi. The Finnish collecting site is a calcareous herb-rich forest.

Conservation

Red-listed in Finland (VU, Penttinen et al. 2010).

Synplasta pseudingeniosa Zaitzev, 1993*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=139685

Materials

a. country: Finland; stateProvince: Regio kuusamoënsis; municipality: Kuusamo; locality: Kuohusuo-Kalliovaara; decimalLatitude: 65.674; decimalLongitude: 28.888; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2004-7-30/7-30; habitat: old managed forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: M.Jaschhof and C.Jaschhof; identifiedBy: J.Jakovlev; institutionCode: JJH

b. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Tambitsy, Tolstyi Navolok; decimalLatitude: 62.291; decimalLongitude: 35.57; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2013-8-26; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

Distribution

European. Recorded so far only from NW Russia (Zaitzev 1993, Polevoi 2000), Norway (Søli and Kjaerandsen 2008), Sweden (Kjaerandsen et al. 2007), Estonia (Chandler 2004) and Slovakia (Ševčík and Kurina 2011).

Ecology

Immature stages are unknown.

Dynatosoma cochleare Strobl, 1895**

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=140556

Material

a. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Valaam, Divnaya Bukhta; decimalLatitude: 61.35; decimalLongitude: 30.99; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-7-27/8-2; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

Distribution

Palaearctic. Widely distributed in Europe (Chandler 2004, Ševčík and Kurina 2011) and also recorded from the Russian Far East, Kuril Islands (Zaitzev 2003). In Fennoscandia reported from Finland (Hackman 1980), Norway (Gammelmo and Søli 2006) and Sweden (Kjaerandsen et al. 2007). New to the Republic of Karelia.

Ecology

The Karelian specimen was collected in herb-rich spruce dominated forest. The larvae of *Dynatosoma* usually live within fruiting bodies of soft polypores (Ševčík 2010, Jakovlev 2012). Their presence may often be detected by white frass that the larvae extrude from their burrows onto the surface of the fungus (Edwards 1925).

Dynatosoma majus Landrock, 1912

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140563

Materials

a. country: Finland; stateProvince: Tavastia australis; verbatimLocality: Padasjoki, Vesijako Strict Nature Reserve; decimalLatitude: 61.350; decimalLongitude: 25.105; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-4-28/5-27; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J. Jakovlev; identifiedBy: J. Jakovlev; institutionCode: JJH

b. country: Finland; stateProvince: Tavastia australis; verbatimLocality: Lammi, Evo, Puukkohonka; decimalLatitude: 61.222; decimalLongitude: 25.052; geodeticDatum:

WGS84; samplingProtocol: Malaise trap; eventDate: 2004-6-29/7-27; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J. Jakovlev; identifiedBy: J. Jakovlev; institutionCode: JJH

c. country: Finland; stateProvince: Lapponia enontekiensis; verbatimLocality: Pallas-Yllästunturi National Park, Röyninkuru; verbatimElevation: 360 m; decimalLatitude: 68.; decimalLongitude: 24.; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2013-7-5/8-7; habitat: headwater stream, old-growth spruce forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0395; recordedBy: J. Salmela; S. Lapinniemi; identifiedBy: J. Salmela; institutionCode: JES

d. country: Finland; stateProvince: Tavastia australis; verbatimLocality: Kuru, Petäjäjärvi; decimalLatitude: 62.077; decimalLongitude: 23.051; geodeticDatum: WGS84; samplingProtocol: Bait trap; eventDate: 1998-8-24/9-17; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: M. Kuussaari; identifiedBy: A. Polevoi; J. Jakovlev; institutionCode: FRIP

e. country: Finland; stateProvince: Tavastia australis; verbatimLocality: Ruovesi, Susimäki; decimalLatitude: 61.857; decimalLongitude: 24.237; geodeticDatum: WGS84; samplingProtocol: Window trap; eventDate: 1998-7-17/8-12; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: M. Kuussaari; identifiedBy: A. Polevoi; J. Jakovlev

f. country: Finland; stateProvince: Satakunta; verbatimLocality: Parkano, Nälkähittenkangas; decimalLatitude: 62.083; decimalLongitude: 23.090; geodeticDatum: WGS84; samplingProtocol: Bait trap; eventDate: 1998-6-15/29; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: M. Kuussaari; identifiedBy: A. Polevoi; J. Jakovlev

Distribution

Palaearctic. The species is known from Central and eastern Europe (Chandler 2004), Sibera and Russian Far East (Zaitzev 2003). In Fennoscandia only recorded from Sweden (hemiboreal zone, Kjaerandsen et al. 2007) and Finland. The majority of the Finnish records, five out of six, are from the south boreal zone. One of the records is from NW Lapland, north boreal zone.

Ecology

Finnish records are invariably from *Vaccinium myrtillus* type old-growth boreal forests. Immature stages are unknown, but are likely associated with polyporous fungi (see *D. cochleare*).

Conservation

Red-listed in Finland (NT, Penttinen et al. 2010).

Dynatosoma rufescens (Zetterstedt, 1838)

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=140571

Material

a. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Valday, lake Ladozero; decimalLatitude: 63.588; decimalLongitude: 35.844; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2010-6-27/8-13; individualCount: 3; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

Distribution

European. Known from central and northern Europe (Chandler 2004). In Fennoscandia reported from Finland (Hackman 1980), Norway (Gammelmo and Søli 2006) and Sweden (Kjaerandsen et al. 2007). Earlier records from the Republic of Karelia (Polevoi 2000) are erroneous and refer to *D. silesiacum* Ševčík.

Ecology

Karelian specimens were collected in *Vaccinium myrtillus* type spruce dominated forest. This species was reared from *Laetiphorus sulphureus* in Germany (Kallweit 1990).

Dynatosoma silesiacum Ševčík, 2001**

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=140575

Materials

a. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Kartesh; decimalLatitude: 66.337; decimalLongitude: 33.649; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 1996-7-22/24; individualCount: 2; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

b. country: Russia; stateProvince: Republic Karelia; verbatimLocality: 6 km N of Tolvojarvi; decimalLatitude: 62.317; decimalLongitude: 31.435; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 1998-7-25/8-14; individualCount: 2; sex: male; recordedBy: M. Tietäväinen et al.; identifiedBy: A. Polevoi; institutionCode: FRIP

c. country: Russia; stateProvince: Republic Karelia; verbatimLocality: 5 km N of Tolvojarvi; decimalLatitude: 62.317; decimalLongitude: 31.435; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 1999-6-2/9-7; individualCount: 8; sex: male; recordedBy: M. Tietäväinen et al.; identifiedBy: A. Polevoi; institutionCode: FRIP

Distribution

Described from Czech Republic (Ševčík 2001a), later reported from Finland (Jakovlev et al. 2006) and Sweden (Kjaerandsen et al. 2007). Specimens from Russian Karelia were previously misidentified as *D. rufescens* (Polevoi 2000).

Ecology

Karelian specimens were collected in *Vaccinium myrtillus* type forests of different age and tree composition. Immature stages are unknown.

Epicypta limnophila Chandler, 1981*

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=140549

Materials

a. genus: Epicypta; specificEpithet: limnophila; scientificNameAuthorship: Chandler, 1981; country: Finland; stateProvince: Nylandia; municipality: Espoo; locality: Nuuksio, Siikajärvi; decimalLatitude: 60.288; decimalLongitude: 24.541; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2005-5-13/6-13; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Jakovlev; J.Penttinen; identifiedBy: J.Jakovlev; institutionCode: JJH

b. genus: Epicypta; specificEpithet: limnophila; scientificNameAuthorship: Chandler, 1981; country: Finland; stateProvince: Nylandia; municipality: Espoo; locality: Matalajärvi; decimalLatitude: 60.247; decimalLongitude: 24.687; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-21/8-23; habitat: swampy lake shore; individualCount: 2; sex: male; catalogNumber: MYCE-JS-2013-0339; recordedBy: J. Ilmonen; otherCatalogNumbers: MYCE-JS-2013-0343; identifiedBy: J. Salmela; institutionCode: JES

Distribution

Holarctic. *Epicypta limnophila* is known from USA, British Isles (Chandler 1981), Central Europe and Fennoscandia (Chandler 2004, Kjaerandsen 2012). In Fennoscandia recorded from Russian Karelia (Polevoi 2000, citing Zaitzev 1987), Norway (Anonymous 2010) and Sweden (Kjaerandsen 2012). New for Finland.

Ecology

In the British Isles the species is associated with wet woodlands and bogs, suggesting that it may develop on decaying herbaceous vegetation, rather than dead wood, unlike the related species, *Epicypta aterrima* (Zetterstedt) and *Epicypta scatophora* (Perris) (Chandler 1981). Finnish sampling sites are a herb-rich forest and a swampy lake shore.

Conservation

Red-listed in Norway (VU, Anonymous 2010, Gammelmo et al. 2010).

Macrobrachius kowarzii Dziedzicki, 1889**

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=140540

Material

a. country: Russia; stateProvince: Leningrad province; verbatimLocality: Voznesenje, 1 km SE of Gimreka; decimalLatitude: 61.151; decimalLongitude: 35.642; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008-4-23/5-25; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

Distribution

European. Rare species distributed in Central Europe (Chandler 2004, Ševčík and Kurina 2011). New to Russia and Fennoscandia.

Ecology

Collected in *Vaccinium myrtillus* type pine-dominated forest. Immature stages are unknown.

Mycetophila biformis Maximova, 2002***

Materials

a. country: Russia; stateProvince: Republic Karelia; verbatimLocality: 5 km N of Tolvojarvi; decimalLatitude: 62.318; decimalLongitude: 31.436; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 1999-6-22/30; individualCount: 1; sex: male; recordedBy: M. Tietäväinen et al.; identifiedBy: A. Polevoi; institutionCode: FRIP

b. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja; decimalLatitude: 67.835; decimalLongitude: 29.454; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-10/8-16; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0138; recordedBy: J. Salmela; identifiedBy: A. Polevoi; institutionCode: JES

Distribution

Palaearctic. Described from West Siberia (Maximova 2002), no other previous records were known. New to Europe, Finland and the Republic of Karelia.

Ecology

The Karelian specimen was collected in *Vaccinium myrtillus* type spruce dominated forest. The Finnish sampling site is a headwater stream surrounded by old-growth boreal forest. Immature stages are unknown.

Taxon discussion

Mycetophila biformis Maximova, 2002 is a junior primary homonym of *M. biformis* Duret, 1992. A replacement name will be given by the author in the near future (Yu. Maximova, pers. comm.).

Mycetophila boreocruciator Ševčík, 2003

- http://www.faunaeur.org/full_results.php?id=140347

Material

a. country: Finland; stateProvince: Regio kuusamoensis; verbatimLocality: Salla, Kuntasjoki, Värriö Strict Nature Reserve; verbatimElevation: 320 m; decimalLatitude: 67.749; decimalLongitude: 29.617; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2013; verbatimEventDate: 2013-6-4/29; habitat: headwater stream, old-growth boreal forest; individualCount: 2; sex: male; catalogNumber: DIPT-JS-2014-0009; recordedBy: J. Salmela; T. Hietajärvi; identifiedBy: J. Salmela; institutionCode: JES

Distribution

European. Description of the species was based on material collected from Sweden, Estonia and Slovakia (Ševčík 2003). Recently found from Russia, Murmansk region (Polevoi 2010) and northern Norway (Søli and Rindal 2012). The Swedish records range from the hemiboreal to the boreal zone (Kjaerandsen et al. 2007). New for Finland. Records of *M. paracruciator* Lastovka & Matile, 1974 from Switzerland, Italy and France may actually represent *M. boreocruciator* (Chandler 2004).

Ecology

Immature stages are unknown. The Finnish sampling site is a headwater stream valley surrounded by old-growth boreal forest.

Mycetophila cingulum Meigen, 1830*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140354

Materials

a. country: Finland; stateProvince: Karelia ladogensis; municipality: Parikkala; locality: Siikalahti; decimalLatitude: 61.556; decimalLongitude: 29.558; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008-7-22/9-1; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Jakovlev; institutionCode: JPJ

b. country: Finland; stateProvince: Nylandia; municipality: Helsinki; locality: Tullisaari, Stansvikin kartano; decimalLatitude: 60.169; decimalLongitude: 25.024; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2011-8-2/8-13; habitat: Wood-storage areas in Helsinki; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

Distribution

Holarctic. In Europe recorded mainly from western, northern and central Europe (Chandler 2004, Kjaerandsen 2012). In Fennoscandia there are few and scattered records from southern and northern parts of the region (Kjaerandsen et al. 2007, Søli and Kjaerandsen 2008). Here reported formally for the first time from Finland.

Ecology

Larvae are associated with fruiting bodies of a saproxylic bracket fungi: *Polyporus squamosus* (Jakovlev 1994, Zaitzev 2003, Ševčík 2010) and *Grifola frondosa* (Chandler 1993).

Conservation

Red-listed in Finland (VU, Penttinen et al. 2010). This species is common in the British Isles and western Europe, but in Finland was found only in two localities, a herb rich forest at Parikkala and a city park at Helsinki, both situated in southernmost part of the country. Its host fungus *P. squamosus* is distributed chiefly in southern Finland, e.g. colonize elm, ash, maple trees in parks, but could also be found at moist places on willows in central Finland.

Mycetophila confusa Dziedzicki, 1884

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140360

Material

a. country: Finland; stateProvince: Tavastia australis; municipality: Nastola; locality: Kurasto; decimalLatitude: 61.109; decimalLongitude: 24.262; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-6-1/6-15; habitat: Semi-natural forest with lime; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

Distribution

Palaearctic, rather wide range in Europe (Chandler 2004). Listed from Finland as *M. affluctata* Edwards, 1941 (Hackman 1980) without locality data. Most likely a very rare species in Fennoscandia (cf. Kjaerandsen et al. 2007, Anonymous 2010).

Ecology

The Finnish collecting site is a herb-rich forest in the south boreal zone. Immature stages are unknown. Generally, *Mycetophila* species are associated as larvae with fruiting bodies of macrofungi, both terrestrial and wood-growing; a few species feed on slime moulds (Jakovlev 2011a).

Conservation

Red-listed in Norway (VU, Anonymous 2010, Gammelmo et al. 2010).

Mycetophila devioides Bechev, 1988*

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=140370

Material

a. country: Finland; stateProvince: Karelia borealis; verbatimLocality: Ilomantsi, Kotavaara; decimalLatitude: 63.029; decimalLongitude: 31.377; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 1997-9-15/29; individualCount: 1; sex: male; recordedBy: M. Tietäväinen et al.; identifiedBy: A. Polevoi; institutionCode: FRIP

Distribution

European. The species was described from Bulgaria (Bechev 1988) and has been later recorded only from Slovakia (Chandler 2004) and Ukraine (Zaitzev 2003). No previous findings from the Nordic region, new for Finland.

Ecology

Collected in *Vaccinium myrtillus* type spruce dominated forest. Immature stages are unknown.

Mycetophila distigma Meigen, 1830*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140372

Materials

a. country: Finland; stateProvince: Nylandia; municipality: Helsinki; locality: Tuomarinkylä; decimalLatitude: 60.261; decimalLongitude: 24.965; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2011-6-5/7-4; habitat: Wood-storage areas in Helsinki; individualCount: 5; sex: 2 males, 3 females; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

b. country: Finland; stateProvince: Nylandia; municipality: Helsinki; locality: Tuomarinkylä; decimalLatitude: 60.261; decimalLongitude: 24.965; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2011-7-5/7-20; habitat: Wood-storage areas in Helsinki; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

Distribution

European. *Mycetophila distigma* (Fig. 21) is recorded from central and northern Europe (Chandler 2004). In Fennoscandia known from Sweden (Lule Lapmark, Kjaerandsen et al. 2007) and Norway (Akershus, Soli et al. 2009). New for the Finnish fauna.

Figure 21.

Mycetophila distigma Meigen, male specimen collected from Finland, lateral view.

Ecology

Finnish specimens were collected in wood-storage areas in the city parks of Helsinki. Probably a saproxylic species, reared by Ševčík (Ševčík 2010) from the polypore fungus *Bjerkandera adusta.*

Mycetophila forcipata Lundström, 1913**

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=140386

Materials

a. country: Russia; stateProvince: Leningrad province; verbatimLocality: Voznesenje, 1 km SE of Gimreka; decimalLatitude: 61.151; decimalLongitude: 35.642; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008-8-27/10-1; individualCount: 2; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

b. country: Russia; stateProvince: Republic Karelia; verbatimLocality: 5 km N of Tolvojarvi; decimalLatitude: 62.318; decimalLongitude: 31.436; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 1999-6-11/22; individualCount: 1; sex: male; recordedBy: M. Tietäväinen; identifiedBy: A. Polevoi; institutionCode: FRIP

c. country: Russia; stateProvince: Republic Karelia; verbatimLocality: 5 km N of Tolvojarvi; decimalLatitude: 62.318; decimalLongitude: 31.436; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 1999-8-17/26; individualCount: 1; sex: male; recordedBy: M. Tietäväinen; identifiedBy: A. Polevoi; institutionCode: FRIP

Distribution

Palaearctic. Widely distributed in Europe and East Palaearctic (Chandler 2004, Zaitzev 2003). In Fennoscandia known from Sweden (Kjaerandsen et al. 2007), Finland and

Murmansk Province (Jakovlev and Penttinen 2007, Polevoi 2010). New to the Republic of Karelia.

Ecology

Karelian specimens were collected in *Vaccinium myrtillus* type coniferous forests, the Finnish sampling sites are chiefly old-growth coniferous forest, but also burnt clear cuts with some retained trees. Larvae live in bracket fungi, most rearing records are from *Piptoporus betulinus* (Jakovlev 1994, Ševčík 2010).

Mycetophila lobulata Zaitzev, 1999*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140422

Material

a. country: Finland; stateProvince: Regio aboënsis; municipality: Perniö; locality: Matilda; decimalLatitude: 60.329; decimalLongitude: 23.670; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-8-15/9-15; habitat: Semi-natural forest with lime; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

Distribution

Palaearctic. The species was described from Russia (European part and Far East, Zaitzev 1999) and has been later found from southern Sweden (Kurina et al. 2004). No previous records from Finland.

Ecology

In Sweden collected from a mixed forest (Kurina et al. 2004), the Finnish sampling site is a herb-rich forest in the hemiboreal zone. Saproxylic, larvae were found in a bracket fungus (*Inonotus* sp; Zaitzev 1999, Zaitzev 2003).

Mycetophila mohilevensis Dziedzicki, 1884**

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=140433

Materials

a. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Obzha, 1 km NE of Ustje Obzhanki; decimalLatitude: 60.828; decimalLongitude: 32.83; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2012-6-23; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

b. country: Russia; stateProvince: Republic Karelia; verbatimLocality: 2 km NW of Besovets; decimalLatitude: 61.869; decimalLongitude: 34.116; geodeticDatum: WGS84; samplingProtocol: Pitfall trap; eventDate: 2009-10-12/16; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

Distribution

Palaearctic. Scattered records in Europe and East Russia (Chandler 2004, Zaitzev 2003). In Fennoscandia known from Finland (Hackman 1980), Norway (Gammelmo and Søli 2006) and Sweden (Kjaerandsen et al. 2007). New to the Republic of Karelia.

Ecology

Collected in *Vaccinium myrtillus* type coniferous forests in different succession stages. Larvae live in lignicolous fungi, rearing records exist from *Piptoporus betulinus* (Zaitzev 2003) and *Tyromyces chioneus* (Ševčík 2010).

Mycetophila monstera Maximova, 2002***

- Catalogue of Life http://www.catalogueoflife.org/col/details/species/id/8760852

Material

a. country: Finland; stateProvince: Lapponia enontekiensis; verbatimLocality: Pallas-Yllästunturi National Park, Röyninkuru; verbatimElevation: 380 m; decimalLatitude: 68.146; decimalLongitude: 24.071; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2013-6-5/7-6; habitat: headwater stream, old-growth spruce forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0391; recordedBy: J. Salmela; S. Lapinniemi; identifiedBy: J. Salmela; institutionCode: JES

Distribution

Palaearctic. The species was recently described from West Siberia (Maximova 2002), here reported for the first time from Europe and Finland.

Ecology

Apparently a forest-dwelling, boreal species. The Finnish sampling site is a headwater stream surrounded by an old-growth spruce forest. Immature stages are unknown.

Mycetophila ostentanea Zaitzev, 1998**

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=140454

Material

a. country: Russia; stateProvince: Republic Karelia; verbatimLocality: 5 km N of Tolvojarvi; decimalLatitude: 62.318; decimalLongitude: 31.436; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 1998-8-29/9-11; individualCount: 2; sex: male; recordedBy: M. Tietäväinen et al.; identifiedBy: A. Polevoi; institutionCode: FRIP

Distribution

European. Described from Vologda Province in Russia (Zaitzev 1998). Also recorded from Czech Republic (Ševčík 2001b) and Finland (Polevoi et al. 2006). New to the Republic of Karelia.

Ecology

Collected in *Vaccinium myrtiillus* type spruce dominated forest. Reared by Ševčík (Ševčík 2010) from the polyporous fungus *Postia undosa.*

Mycetophila pyrenaica Matile, 1967*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140471

Material

a. country: Finland; stateProvince: Tavastia australis; municipality: Tammela; locality: Pehkijärvi; decimalLatitude: 59.963; decimalLongitude: 23.585; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2099-6-1/6-15; habitat: aspen dominated HRT in Häme, close to Forss; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

Distribution

Palaearctic. Described from France (Matile 1967) and has been later recorded from Germany (Chandler 2004), Poland (Kurina and Ševčík 2006), Russia (Zaitzev 2003), Norway (Anonymous 2010, Gammelmo and Søli 2006), Sweden (Kurina et al. 2004) and the Italian Alps (Kurina 2008). New for Finland.

Ecology

Immature stages are unknown. The Finnish collecting site is a herb-rich forest dominated by aspen and spruce.

Conservation

Red-listed in Norway (VU, Anonymous 2010, Gammelmo et al. 2010).

Mycetophila sigmoides Loew, 1869*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140484

Materials

a. country: Finland; stateProvince: Nylandia; municipality: Helsinki; locality: Tullisaari, Stansvikin kartano; decimalLatitude: 60.166; decimalLongitude: 25.027; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2011-6-12/8-2; habitat: City parks_old protected mansion park in the city of Helsinki with numerous old hollow

b. deciduous trees, mainly lime trees, oaks and maples; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH
country: Finland; stateProvince: Regio aboënsis; municipality: Karjalohja; locality: Karkali_South; decimalLatitude: 60.238; decimalLongitude: 23.785; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2004-8-23/10-4; habitat: old-growth forest, herb-ric type; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

Distribution

Holarctic. The species was described from USA (Loew 1869) and has been reported from Canada (Laffoon 1957), Russia (Siberia and Far East, Zaitzev 2003, Karelia, Polevoi and Humala 2005), Czech republic, Hungary (Chandler 2004), Britain, France and northern Italy (Gibbs 2009), Norway (Kjaerandsen and Jordal 2007) and Sweden (Kjaerandsen 2012). Here reported formally as new for Finland.

Ecology

Larvae are associated with wood-decaying polyporous fungi, *Coriolus*, *Daedaliopsis* and *Fomitopsis* (Zaitzev 2003, Ševčík 2010). The Finnish collecting site is a hemiboreal herb-rich forest.

Conservation

Red-listed in Norway (DD, Anonymous 2010) and Finland (VU, Penttinen et al. 2010). This species has only been recorded in Britain since 1998 but is now widespread in southern England, suggesting that it is a recent arrival. Records elsewhere in western Europe suggest that it has recently spread and it is possible that its spread into Fennoscandia has also been recent (P.Chandler, pers. comm). An increase in records might therefore be expected, so red-list status may be premature.

Mycetophila sinuosa Plassmann & Schacht, 1999*

- Barcode of Life http://www.faunaeur.org/full_results.php?id=140490

Material

a. country: Finland; stateProvince: Regio aboënsis; municipality: Salo; locality: Märy; decimalLatitude: 60.223; decimalLongitude: 22.905; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-8-15/9-15; habitat: old managed forest, herb-rich type, large oak trees; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

Distribution

European. The species was described from Germany (Plassmann and Schacht 1999) and has been later recorded from Czech republic (Ševčík 2001a), Switzerland (Chandler 2004) and southern Sweden (Kjaerandsen et al. 2007). New for Finland.

Ecology

The Finnish sampling site is a herb-rich forest characterized by old oak trees. Immature stages are unknown.

Mycetophila triangularis Lundström, 1912**

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=140513

Material

a. country: Russia; stateProvince: Republic Karelia; verbatimLocality: 5 km N of Tolvojarvi; decimalLatitude: 62.318; decimalLongitude: 31.436; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 1999-6-11/22; individualCount: 2; sex: male; recordedBy: M. Tietäväinen et al.; identifiedBy: A. Polevoi; institutionCode: FRIP

Distribution

Palaearctic. Rare species which was known for a long time only from the type locality, Ukraine (Lundström 1912). It has since been recorded also from Czech Republic, Slovakia (Ševčík 2004) and Altai (Zaitzev 2003). New to the Republic of Karelia and Fennoscandia.

Ecology

Collected in *Vaccinium myrtiillus* type coniferous forest in different succession stages. Immature stages are unknown.

Mycetophila uliginosa Chandler, 1988*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140523

Materials

a. country: Finland; stateProvince: Lapponia enontekiensis; municipality: Enontekiö; locality: Kilpisjärvi_Saana_South_1; decimalLatitude: 69.033; decimalLongitude: 20.838; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-7-15/8-1; habitat: mountain birch forest; individualCount: 1; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Penttinen

b. country: Finland; stateProvince: Tavastia australis; municipality: Muurame; locality: Kuusimäki Forest Reserve; decimalLatitude: 62.215; decimalLongitude: 25.496; geodeticDatum: WGS84; samplingProtocol: Reared from wood; eventDate: 2008-7-8/8-4; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: Noora Vartija; identifiedBy: J.Penttinen; institutionCode: JPJ

c. country: Finland; stateProvince: Tavastia australis; municipality: Muurame; locality: Kuusimäki Forest Reserve; decimalLatitude: 62.215; decimalLongitude: 25.496; geodeticDatum: WGS84; samplingProtocol: Reared from wood; eventDate: 2008-6-9/7-7; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: Noora Vartija; identifiedBy: J.Penttinen; institutionCode: JPJ

d. country: Finland; stateProvince: Savonia australis; municipality: Rantasalmi; locality: Linnansaari; decimalLatitude: 62.116; decimalLongitude: 28.477; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008-7-25/9-4; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

e. country: Finland; stateProvince: Tavastia borealis; municipality: Saarijärvi; locality: Pyhä-Häkki National Park; decimalLatitude: 62.842; decimalLongitude: 25.474; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

f. country: Finland; stateProvince: Lapponia enontekiensis; municipality: Enontekiö; locality: Kilpisjärvi_Saana_North_4; decimalLatitude: 69.045; decimalLongitude: 20.808; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-8-1/8-15; habitat: mountain birch forest; individualCount: 1; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev

g. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Sodankylä, Ylä-Postojoki; decimalLatitude: 67.851; decimalLongitude: 26.481; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-6-1/29; habitat: riparian forest; individualCount: 1; sex: male; catalogNumber: MYCE-NV-2013-0136; recordedBy: J. Salmela; identifiedBy: N. Vartija; J. Salmela; institutionCode: JES

Distribution

European. The species was described from the British Isles (Chandler 1988) and has been since recorded from Spain, France (Chandler 2004), Norway (Kjaerandsen and Jordal 2007, Anonymous 2010) and Sweden (Kjaerandsen et al. 2007). New for Finland.

Ecology

Reared from decaying logs *in situ* (eclector traps). The Finnish collecting sites are a mountain birch forest, a riparian forest and old-growth boreal forests. Biology unknown. The larvae probably develop in lignicolous fungi (Falk and Chandler 2005).

Conservation

Red-listed in Norway (DD, Anonymous 2010).

Mycetophila unguiculata Lundström, 1913**

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=140524

Materials

a. country: Russia; stateProvince: Leningrad province; verbatimLocality: Voznesenje, 1 km SE of Gimreka; decimalLatitude: 61.151; decimalLongitude: 35.642; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008-4-23/5-25; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

b. country: Russia; stateProvince: Leningrad province; verbatimLocality: Voznesenje, 1 km SE of Gimreka; decimalLatitude: 61.151; decimalLongitude: 35.642; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008-8-27/10-1; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

Distribution

Palaearctic. Scattered records from Europe and West Siberia (Chandler 2004, Zaitzev 2003). In Fennoscandia known from Norway (Gammelmo and Søli 2006) and Sweden (Kjaerandsen et al. 2007). New to the Republic of Karelia.

Ecology

The Karelian specimens were collected in secondary *Vaccinium myrtillus* type pine dominated forest. Immature stages are unknown.

Mycetophila uschaica Subbotina & Maximova, 2011***

Material

a. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Tipinitsy, 4 km S of Polya; decimalLatitude: 62.29; decimalLongitude: 35.309; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2013-8-25; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

Distribution

Palaearctic. The species was known only from the type locality in West Siberia, Tomsk Province (Subbotina and Maximova 2011). New to the Republic of Karelia and Europe.

Ecology

Karelian specimens were collected in *Vaccinium myrtillus* type spruce dominated forest. Immature stages are unknown.

Phronia gracilis Hackman, 1970

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140266

Material

a. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Savukoski, Törmäoja; decimalLatitude: 67.835; decimalLongitude: 29.454; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-6-14/7-10; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0179; recordedBy: J. Salmela; identifiedBy: J. Salmela; institutionCode: JES

Distribution

European. The species was described from NE Finland, Kuusamo, Jäkälävuoma (Hackman 1970) and has been since recorded only from Germany (Chandler 2004). The species has a characteristic eastern distribution in Finland, so far known from the Kainuu and Kuusamo areas (Hackman 1970, Jakovlev 2011bJakovlev 2011b) here reported for the first time from NE Lapland.

Ecology

Collected from old-growth boreal forests. Immature stages are unknown. Larvae of *Trichonta and Phronia* are usually surface feeders on encrusting fungi and slime moulds (Gagné 1975, Gagné 1981).

Conservation

Red-listed (NT) in Finland (Penttinen et al. 2010).

Phronia humeralis Winnertz, 1863**

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=140267

Material

a. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Obzha, Mayachino; decimalLatitude: 60.777; decimalLongitude: 32.818; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2012-6-25; individualCount: 2; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

Distribution

Palaearctic. Widely distributed in Europe (Chandler 2004, Zaitzev 2003), recorded from West Siberia (Ostroverkhova 1979). In Fennoscandia known from Finland (Hackman 1980), Norway (Gammelmo and Søli 2006) and Sweden (Kjaerandsen et al. 2007). New to the Republic of Karelia.

Ecology

Collected in herb-rich spruce dominated forest. Larvae are associated with dead wood and wood-growing fungi. Reared from *Corticium praetermissum* (Buxton 1960), *Chondrostereum purpureum*, and repeatedly obtained with eclector traps over decaying logs (Jakovlev 2011a).

Phronia maculata Dziedzicki, 1889**

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=140275

Materials

a. country: Russia; stateProvince: Leningrad province; verbatimLocality: Voznesenje, 1 km E of Gimreka; decimalLatitude: 61.151; decimalLongitude: 35.64; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008-4-23/5-25; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

b. country: Russia; stateProvince: Leningrad province; verbatimLocality: Voznesenje, 1 km E of Gimreka; decimalLatitude: 61.151; decimalLongitude: 35.64; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008-8-27/10-1; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

c. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Velikaya Guba, 2 km NW of Uzkaya Salma; decimalLatitude: 62.14; decimalLongitude: 34.941; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2013-6-28; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

d. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Velikaya Guba, 5 km NE of Lipovitsy; decimalLatitude: 62.132; decimalLongitude: 35.093; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2013-6-25; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

e. country: Russia; stateProvince: Republic Karelia; verbatimLocality: 11 km W of Tipinitsy; decimalLatitude: 62.185; decimalLongitude: 35.311; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2013-8-27; individualCount: 3; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

f. country: Finland; stateProvince: Nylandia; municipality: Espoo; locality: Matalajärvi; decimalLatitude: 60.247; decimalLongitude: 24.687; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2012-7-21/8-23; habitat: swampy lake shore; individualCount: 1; sex: male; catalogNumber: MYCE-JS-2013-0340; recordedBy: J. Ilmonen; identifiedBy: J. Salmela; institutionCode: JES

g. country: Finland; stateProvince: Savonia australis; municipality: Rantasalmi; locality: Linnansaari; decimalLatitude: 62.116; decimalLongitude: 28.477; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008-5-20/6-24; habitat: dry herb-rich forest; individualCount: 2; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

Distribution

Palaearctic. Widely disributed in Europe and East Russia (Chandler 2004, Zaitzev 2003). In Fennoscandia known from Finland (Hackman 1980) and Sweden (Kjaerandsen et al. 2007). New to the Republic of Karelia.

Ecology

The Karelian specimens were collected in *Vaccinium myrtillus* type coniferous forests in different succession stages. The Finnish specimen was collected from a swampy lake shore of an eutrophic lake. Immature stages are unknown.

Conservation

Red-listed in Finland, presumed to occur in herb-rich forests (VU, Penttinen et al. 2010).

Phronia mutila Lundström, 1911*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140281

Material

a. country: Finland; stateProvince: Lapponia enontekiensis; municipality: Enontekiö; locality: Kilpisjärvi_Saana_South_1; decimalLatitude: 69.033; decimalLongitude: 20.837; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-6-19/7-14; habitat: subarctic mountain birch forest; individualCount: 3; sex: 1 male, 2 females; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev; institutionCode: JPJ

Distribution

European. This very rare species was only known from the Austrian type material (Lundström 1911) and from one recent record from Russian Karelia, from the shore of the White Sea (Humala and Polevoi 2008). No former records from Finland. The species is possibly arctic-alpine.

Ecology

The Finnish sampling locality is a mountain birch forest in NW Lapland. Immature stages are unknown.

Phronia signata Winnertz, 1863**

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=140303

Materials

a. country: Russia; stateProvince: Republic Karelia; verbatimLocality: 3 km NW of Sheltozero; decimalLatitude: 61.393; decimalLongitude: 35.308; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2004-7-13; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

b. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Tambitsy, Kaskosel'ga; decimalLatitude: 62.242; decimalLongitude: 35.492; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2013-8-28; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

Distribution

Palaearctic. Widely distributed in Europe and East Russia (Chandler 2004, Zaitzev 2003). In Fennoscandia known from Finland (Hackman 1980), Norway (Gammelmo and Søli 2006) and Sweden (Kjaerandsen et al. 2007). New to the Republic of Karelia.

Ecology

The Karelian specimens were collected in *Vaccinium myrtillus* type spruce dominated forests. Immature stages are unknown.

Sceptonia flavipuncta Edwards, 1925*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140188

Material

a. country: Finland; stateProvince: Karelia ladogensis; municipality: Parikkala; locality: Siikalahti; decimalLatitude: 61.556; decimalLongitude: 29.558; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008-7-22/9-1; habitat: old-growth forest, herb-rich type; individualCount: 1; sex: male; recordedBy: J.Penttinen; identifiedBy: J.Penttinen; institutionCode: JPJ

Distribution

European. Described from Great Britain (Edwards 1925), later recorded from many countries in western and southern Europe (Chandler 2004). In Fennoscandia recorded from Russian Karelia (Polevoi et al. 2005), Sweden and Norway (Kjaerandsen et al. 2007, Kjaerandsen 2012). Here formally reported as new for Finland.

Ecology

The only Finnish sampling locality is a herb-rich forest. Reared from *Rhodocybe gemina* in Czech Republic (Ševčík 2010).

Conservation

Included in the Red List of Finnish species (NT, Penttinen et al. 2010).

Trichonta generosa Gagne, 1981*

- Fauna europaea http://www.faunaeur.org/full_results.php?id=140139

Materials

a. country: Finland; stateProvince: Regio kuusamoënsis; municipality: Kuusamo; locality: Kuohusuo-Kalliovaara; decimalLatitude: 65.674; decimalLongitude: 28.888; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2004-7-30/7-30; habitat: old managed forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: M.Jaschhof and C.Jaschhof; identifiedBy: J.Jakovlev; institutionCode: JJH

b. country: Finland; stateProvince: Lapponia enontekiensis; municipality: Enontekiö; locality: Kilpisjärvi_Saana_North_3; decimalLatitude: 69.044; decimalLongitude: 20.807; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-8-1/8-15; habitat: Subarctic; individualCount: 1; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev

c. country: Finland; stateProvince: Lapponia enontekiensis; municipality: Enontekiö; locality: Kilpisjärvi_Saana_North_4; decimalLatitude: 69.045; decimalLongitude: 20.808; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-8-1/8-15; habitat: subarctic; individualCount: 1; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev

d. country: Finland; stateProvince: Lapponia enontekiensis; municipality: Enontekiö; locality: Kilpisjärvi_Saana_North_5; decimalLatitude: 69.045; decimalLongitude: 20.809; geodeticDatum: WGS84; samplingProtocol: Sweep netting; eventDate: 2006-6-21/6-21; habitat: Subarctic; individualCount: 1; sex: male; recordedBy: J.Jakovlev; identifiedBy: J.Jakovlev; institutionCode: JJH

e. country: Finland; stateProvince: Lapponia enontekiensis; municipality: Enontekiö; locality: Kilpisjärvi_Saana_South_1; decimalLatitude: 69.033; decimalLongitude: 20.837; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-8-1/8-15; habitat: subarctic; individualCount: 2; sex: 2 male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev

f. country: Finland; stateProvince: Lapponia enontekiensis; municipality: Enontekiö; locality: Kilpisjärvi_Saana_South_2; decimalLatitude: 69.035; decimalLongitude: 20.839; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-8-1/8-15; habitat: subarctic; individualCount: 1; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: J.Jakovlev

g. country: Finland; stateProvince: Lapponia kemensis pars occidentalis; municipality: Muonio; locality: Pallas-Yllästunturi National Park_Pallas_2; decimalLatitude: 68.018; decimalLongitude: 24.153; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2006-6-18/7-14; habitat: old-growth forest, Myrtillus type; individualCount: 1; sex: male; recordedBy: J.Jakovlev and J.Penttinen; identifiedBy: A.Polevoi

h. country: Finland; stateProvince: Lapponia inarensis; municipality: Utsjoki; locality: Galddasjohka; decimalLatitude: 69.861; decimalLongitude: 27.803; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2007-6-15/7-19; habitat: subarctic; individualCount: 1; sex: male; recordedBy: J.Salmela; identifiedBy: J.Jakovlev; institutionCode: JJH

i. country: Finland; stateProvince: Lapponia kemensis pars orientalis; verbatimLocality: Sodankylä, Ylä-Postojoki; decimalLatitude: 67.851; decimalLongitude: 26.481; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2009-6-1/29; habitat: headwater stream; individualCount: 1; sex: male; catalogNumber: MYCE-NV-2013-0151; recordedBy: J.Salmela; identifiedBy: N. Vartija; J. Salmela; institutionCode: JES

Distribution

Holarctic. Described from North America (Gagné 1981), later found in the Altai Mountains, western Siberia (Zaitzev 2003). In Europe recorded so far only from Norway (Økland and Zaitzev 1997, Søli and Rindal 2012) and Murmansk region of NW Russia (Polevoi 2010). No former records from Finland; all findings reported here are from North Finland.

Ecology

Finnish collecting sites are old-growth boreal forests, mountain birch forests and a riparian forest. Immature stages are unknown.

Conservation

Red-listed in Norway (DD, Anonymous 2010, Gammelmo et al. 2010).

Trichonta palustris Maximova, 2002***

- Catalogue of Life http://www.catalogueoflife.org/col/details/species/id/8760853

Material

a. country: Finland; stateProvince: Regio kuusamoensis; verbatimLocality: Salla, Kuntasjoki, Värriö Strict Nature Reserve; verbatimElevation: 320 m; decimalLatitude: 67.749; decimalLongitude: 29.617; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2013; verbatimEventDate: 2013-6-4/29; habitat: headwater stream, old-growth boreal forest; individualCount: 1; sex: male; catalogNumber: DIPT-JS-2014-0004; recordedBy: J. Salmela; T. Hietajärvi; identifiedBy: J. Salmela; institutionCode: JES

Distribution

Palaearctic. The species was described from West Siberia, Kutznetskyi Alatau Nature Reserve, based on a holotype male (Maximova 2002). Here reported for the first time from Europe. The Finnish sampling locality is in NE Lapland, north boreal zone.

Ecology

The holotype male was collected from a swamp (Maximova 2002). The Malaise trapping locality in Värriö is a headwater stream with wet margins, including seepages and rich riparian vegetation, surrounded by old-growth boreal forest. Immature stages are unknown.

Trichonta tristis (Strobl, 1898)**

- Fauna Europaea http://www.faunaeur.org/full_results.php?id=140163

Materials

a. country: Russia; stateProvince: Leningrad province; verbatimLocality: Voznesehje, 1 km E of Gimreka; decimalLatitude: 61.151; decimalLongitude: 35.64; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 2008-4-23/5-25; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

b. country: Russia; stateProvince: Republic Karelia; verbatimLocality: Kivach Nature Reserve; decimalLatitude: 62.272; decimalLongitude: 33.986; geodeticDatum: WGS84; samplingProtocol: Malaise trap; eventDate: 1989-8-24/9-25; individualCount: 1; sex: male; recordedBy: A. Polevoi; identifiedBy: A. Polevoi; institutionCode: FRIP

Distribution

Palaearctic. Recorded from Austria and Switzerland (Chandler 2004), southern Finland (Jakovlev and Penttinen 2007), Murmansk Province (Polevoi 2010) and East Russia (Zaitzev 2003). New to the Republic of Karelia.

Ecology

The Karelian specimens were collected in mixed and aspen dominated deciduous forests. In Finland the species was reared from a decaying spruce log bearing polypore fungus *Antrodia xantha* (Jakovlev and Penttinen 2007).

Notes

This species is closely related to widely distributed *T. vulcani* Dziedzicki and might be overlooked in other countries (Jakovlev and Penttinen 2007).

Acknowledgements

We thank all persons who have helped us with the collecting of fungus gnat material from eastern Fennoscandia. Matti Mäkilä (Rovaniemi) and Matti Siipola (Rovaniemi) were instrumental in data processing. Yulia Maximova (Tomsk) commented our identification *M. monstera* and *T. palustris*. Some of the habitus photos were taken by the staff in MZHF. We thank Jan Ševčík and Peter Chandler for their constructive comments on the manuscript. English text was greatly improved by Liisa Puhakka (Turku). A. Polevoi was supported by the Presidium of the Russian Academy of Sciences (Program "Living Nature: Modern State and Development Problems") and RFBR grant N 13-04-98821 r_sever_a.

Author contributions

JJ, JS and AP wrote the manuscript. All authors were involved in the identification of the studied material. JS took the stacked photos.

References

- Alexander KN (2002) The invertebrates of living and decaying timber In Britain & Ireland. English Nature Research Reports, 467. English Natura, 142 pp. URL: https://www.google.fi/#q=english+nature+research+reports+no.+467
- Anonymous (2010) Rødliste for arter 2010. 1.2.1. Artsdatabanken. URL: http://www.artsportalen.artsdatabanken.no/#/Rodliste2010/Intro/
- Barendrecht G (1938) The Dutch Fungivoridae in the collection of the Zoological Museum at Amsterdam. Tijdschrift voor Entomologie 81: 35-45.

- Bechev D (1988) Two New Species of Mycetophilidae from Bulgaria (Insecta, Diptera). Reichenbachia 25: 185-186.
- Bechev D (1990) Recent Holarctic species of the genus *Anaclileia* Meunier (Insecta, Diptera: Mycetophilidae). Reichenbachia 28: 67-71.
- Bechev D (2000) World distribution of the genera of fungus gnats (Diptera: Sciaroidea, excluding Sciaridae). Studia dipterologica 7: 543-552.
- Bechev D (2006) New data about Keroplatidae (Diptera: Nematocera: Sciaroidea) in Bulgaria. Historia naturalis bulgariga 17: 93-94.
- Buxton PA (1960) British Diptera associated with fungi. 3. - Flies of all families reared from about 150 species of fungi. Entomologist's Monthly Magazine 96: 61-94.
- Caspers N (1987) Mycetophiliden-Fange am Breitenbach/Osthessen (Bundesrepublik Deutschland) (Insecta, Diptera, Nematocera). Nachrichtenblatt der Bayerischen Entomologen 36: 85-95. [In German].
- Cederberg B, Bartsch H, Bjelke U, Brodin Y, Engelmark R, Kjaerandsen J, Struwe I, Sörensson M, Viklund B (2010) Tvåvingar - Flies, Diptera. In: Gärdenfors U (Ed.) Rödlistade arter i Sverige 2010 - The 2010 Red List of Sweden Species. ArtDatabanken SLU, 590 pp.
- Chandler P (1977) Some fungus gnats of the tribe Exechiini (Dipt., Mycetophilidae) new to the British Isles. Proceedings and transactions of the British Entomological and Natural History Society 10: 71-85.
- Chandler P (1992) New records and nine additions to the British list of fungus gnats of the smaller families and sub-families (Diptera: Mycetophiloidea). British Journal of Entomology and Natural History 5: 107-126.
- Chandler P (1993) New rearing records of fungus gnats (Diptera:Mycetophilidae and allied families). Dipterist's Digest (Second series) 13: 29-35.
- Chandler P (2004) Fauna Europaea: Mycetophilidae. 1.0. Release date: 2004 9 27. URL: http://www.faunaeur.org
- Chandler P (2006) Additions and changes to the British fauna of fungus gnats (Diptera: Mycetophilidae). British Journal of Entomology and Natural History 19: 77-89.
- Chandler P, Perry I (2010) More fungus gnats (Diptera, Mycetophilidae) new to Britain. Dipterists Digest (Second Series) 17: 180-184.
- Chandler PJ (1981) The European and North American species of *Epicypta* Winnertz (Diptera: Mycetophilidae). Entomologica Scandinavica 12: 199-212. DOI: 10.1163/187631281794709818
- Chandler PJ (1988) Thirteen species of Mycetophila Meigen (Diptera: Mycetophilidae) new to the British list. British Journal of Entomology and Natural History 1: 139-145.
- Chandler PJ (1994) The fungus gnats of Israel (Diptera: Sciaroidea, excluding Sciaridae). Israel Journal of Entomology 28: 1-100.
- Chandler PJ (2001) Fungus gnats (Diptera: Sciaroidea) new to Britain. British Journal of Entomology and Natural History 13: 215-243.

- Chandler PJ (2008) Greenomyia Brunetti, 1912 (Diptera, Mycetophilidae), a genus new to the British list. British Journal of Entomology and Natural History 21: 137-142.
- Chandler PJ, Blasco-Zumeta J (2001) The fungus gnats (Diptera, Bolitophilidae, Keroplatidae and Mycetophilidae) of the Monegros Region (Zaragoza, Spain) and five other new European species of Pyratula Edwards and Sciophila Meigen. Zapatero 9: 1-24.
- Chandler PJ, Camaño Portela JL (2011) Fungus gnats (Diptera: Bolitophilidae, Keroplatidae, Mycetophilidae) from Galicia, including 28 species new to Spain and 23 new to the Iberian Peninsula. Boletin BIGA. 10. 31-38 pp. URL: http://www.biga.org/Boletin_BIGA/Boletin_BIGA10/BolBIGA10_31-38_FungusGnatsGalicia.pdf
- Cheetham CA (1920) A livewort-eating larva. Naturalist 45: 190.
- Edwards FW (1925) British fungus-gnats (Diptera, Mycetophilidae) with a revised generic classification of the family. Transactions of the Entomological Society of London 1924: 505-662.
- Edwards FW (1941) Notes on British fungus-gnats (Diptera, Mycetophilidae). Entomologist's Monthly Magazine 77: 21-32-67-82.
- Falk SJ, Chandler PJ (2005) A review of the scarce and threatened flies of Great Britain. Part 2: Nematocera and Aschiza not dealt with by Falk (1991). Joint Nature Conservation Committee, 189 pp.
- Gagné RJ (1975) A revision of the Nearctic species of the genus *Phronia* (Diptera: Mycetophiilidae). Transactions of the American Entomological Society 101: 227-318.
- Gagné RJ (1981) A monograph of Trichonta with a model for the distribution of Holarctic Mycetophilidae (Diptera). US Department of Agriculture Technical Bulletin 1638: 1-64.
- Gammelmo Ø, Rindal E (2006) On the family Ditomyiidae (Diptera, Sciaroidea) in Norway. Norwegian Journal of Entomology 53: 47-49.
- Gammelmo Ø, Søli G (2006) Norwegian fungus gnats of the family Mycetophilidae (Diptera, Nematocera). Norwegian Journal of Entomology 53: 57-69.
- Gammelmo Ø, Falck M, Greve L, Jonassen T, Nielsen TR, Søli GE, Skartveit J, Økland B (2010) Tovinger Diptera. In: Kålås A, Viken Å, Henriksen S, Skjelseth S (Eds) The 2010 Norwegian Red List for Species. Norwegian Biodiversity Information Centre, 480 pp. URL: http://www.artsdatabanken.no/File/685/Norsk%20r%C3%B8dliste%20for%20arter
- Gibbs D (2009) Two Fungus Gnats (Diptera, Mycetophilidae) new to Britain. Dipterist Digest (Second Series) 16: 7-13.
- Hackman W (1970) New species of the genus *Phronia* Winnertz (Diptera, Mycetophilidae) from Eastern Fennoscandia and notes on the synonymies in this genus. Notulae entomologicae 50: 41-60.
- Hackman W (1980) A check list of Finnish Diptera I. Nematocera and Brachycera (s.str.). Notulae entomologicae 60: 17-48.
- Halme P, Vartija N, Salmela J, Penttinen J, Norros V (2013) High within- and between-trunk variation in the nematoceran (Diptera) community and its physical

environment in decaying aspen trunks. Insect Conservation and Diversity 6: 502-512. DOI: 10.1111/icad.12007

- Holmgren A (1883) Insecta a viris doctissimis Nordenskiöld illum ducem sequentibus in insulis Waigatsch et Novaja Semlia anno 1875 collecta: Hymenoptera et Diptera. Entomologisk Tidskrift 4: 139-190. [In Latin].
- Holmgren AE (1869) Bidrag till kiinnedomen от Beeren Eilands och Spitsbergens Insekt-fauna. Kungl. Svenska vetenskaps-akademiens handlingar 8 (5): 1-56. [In Swedish, Latin].
- Humala AE, Polevoi AV (2008) Insects. In: Gromtsev AN (Ed.) Rocky landscapes of Karelian shore of the White Sea: nature peculiarities, economic management and protective measures. Karelian Research Centre RAS, Petrozavodsk. [In Russian].
- Humala AE, Polevoi AV (2009) On the insects fauna of South-East Karelia. Transactions of the Karelian Research Centre of RAS 9 (4): 53-75. [In Russian].
- Hutson AM (1979) Notes on Sciophilinae (Dipt., Mycetophilidae) with a revision of Palaearctic *Syntemna* Winnertz. Entomologist's Monthly Magazine 114: 131-145.
- Hutson AM, Ackland DM, Kidd L (1980) Mycetophilidae (Bolitophilinae, Ditiomyiinae, Diadocidiinae, Keroplatinae, Sciophilinae and Manotinae). Diptera, Nematocera . Handbooks for Identification of British Insects, 109 pp.
- Jakovlev EB, Polevoi AV, Humala AE (1994) Insects reared from soil samples in *Vaccinium* pine stand. In: Zjabchenko SS, Fedorets NG (Eds) Structural and functional organisation of forest soils in mid-taiga subzone of Karelia. Karel'skiy Nauchnyi Tsentr Rossijskoj Akademii Nauk, Petrozavodsk. [In Russian].
- Jakovlev J (1994) Palaearctic Diptera associated with fungi and myxomycetes. Karelian Research Center, Russian Academy of Sciences, Forest Research Institute, Petrozavodsk, 128 pp. [In Russian].
- Jakovlev J (2011a) Fungus gnats (Diptera: Sciaroidea) associated with dead wood and wood growing fungi: new rearing data from Finland and Russian Karelia and general analysis of known larval microhabitats in Europe. Entomologica Fennica 22: 157-189.
- Jakovlev J (2011b) From wild forest reindeer to biodiversity studies and environmental education. Abstracts of the 20 years anniversary symposium of the Finnish - Russian Nature Reserve Friendship. From wild forest reindeer to biodiversity studies and environmental education, Kuhmo, 2010-10-5/6. SYKE, Helsinki, 79 pp. URL: https://helda.helsinki.fi/bitstream/handle/10138/40358/Abstracts_fnr20_symposium.pdf?sequence=1 [ISBN ISBN 978-952-11-3845-4 (PDF)].
- Jakovlev J (2012) Fungal hosts of mycetophilids (Diptera: Sciaroidea excluding Sciaridae): a review. Mycology: An International Journal on Fungal Biology 3: 11-23.
- Jakovlev J, Penttinen J (2007) *Boletina dispectoides* sp. n. and six other species of fungus gnats (Diptera: Mycetophilidae) new to Finland. Entomologica Fennica 18: 211-217.
- Jakovlev J, Polevoi A (2008) Two new species of the genus *Phronia* Winnertz (Diptera: Mycetophilidae) from Finland and Russian Karelia. Entomologica Fennica 19: 199-206.

- Jakovlev J, Kjærandsen J, Polevoi A (2006) Seventy species of fungus gnats new to Finland (Diptera: Mycetophilidae). Sahlbergia 11: 22-39.
- Jakovlev J, Kjaerandsen J, Viklund B (2008) Fungus gnats (Diptera: Bolitophilidae, Diadocidiidae, Ditomyiidae, Keroplatidae & Mycetophilidae) from Tyresta National Park and Nature Reserve in Sweden. Sahlbergia 14: 29-52.
- Jakovlev JB, Polevoi AV (1991) Diptera from Malaise traps in pine and aspen forests. In: Jakovlev JB, Mozolevskaya EG (Eds) Entomological research in Kivach Nature Reserve. Karel'skiy Nauchnyi Tsentr Akademii Nauk SSSR, Petrozavodsk. [In Russian].
- Jakovlev JB, Polevoi AV (1997) The list of nematocerous Diptera recorded from Kivach Nature Reserve. In: A.V. K (Ed.) Flora and fauna of nature reserves. KarRC, Petrozavodsk. [In Russian].
- Johannsen OA (1911) The Mycetophilidae of North America. Part III. Bulletin of the Maine Agricultural Experiment Station, Orono 196: 249-328.
- Kallweit U (1990) Zur Kenntnis von *Dynatosoma bukowskii* Zaitzev und *Dynatosoma thoracicum* (Zetterstedt) (Insecta, Diptera: Mycetophilidae). Reicgenbachia 27: 163-171. [In German].
- Kjaerandsen J (1993) Diptera in mines and cave systems in southern Norway. Entomologica Fennica 4: 151-160.
- Kjaerandsen J (2007) Two new species of *Allodia* subgenus *Brachycampta* Winnertz from Norway and Sweden (Diptera: Mycetophilidae). Entomologica Fennica 18: 17-23.
- Kjaerandsen J (2009) The genus *Pseudexechia* Tuomikoski re-characterized, with a review of European species (Diptera: Mycetophilidae). Zootaxa 2056: 1-45.
- Kjaerandsen J (2012) Checklist of Nordic fungus gnats (Diptera: Bolitophilidae, Diadocidiidae, Ditomyiidae, Keroplatidae, Mycetophilidae and Sciarosoma). 1.0. Release date: 2012 5 01. URL: http://sciaroidea.info/node/48341#overlay-context=node/48341
- Kjaerandsen J, Jordal JB (2007) Fungus gnats (Diptera: Bolitophilidae, Diadocidiidae, Ditomyiidae, Keroplatidae and Mycetophilidae) from Møre og Romsdal. Norwegian Journal of Entomology 54: 147-171.
- Kjaerandsen J, Jørgensen LL (1992) Fungus-gnats from the Faroes (Diptera, Mycetophilidae). Entomologiske meddelelser 60: 85-87.
- Kjaerandsen J, Kurina O, Ólafsson E (2007) The fungus gnats of Iceland (Diptera, Keroplatidae & Mycetophilidae). Insect Systematics & Evolution, Supplement 64: 61-96.
- Kjaerandsen J, Martinsson S, Hedmark K, Evenhuis NL (2009) On the genus *Urytalpa* Edwards (Diptera: Keroplatidae) in the Nordic and Nearctic regions, with fixation of a new type species and a key to world males. Zootaxa 2160: 29-50.
- Kjaerandsen J, Hedmark K, Kurina O, Polevoi AV, Økland B, Götmark F (2007) Annotated checklist of fungus gnats from Sweden (Diptera: Bolitophilidae, Diadocidiidae, Ditomyiidae, Keroplatidae and Mycetophilidae). Insect Systematics & Evolution, Supplement 65: 1-165.
- Krivosheina NP, Mamaev BM (1967) Classification key to larvae of arboricolous dipteran insects. Nauka, 366 pp.

- Krzemińska E, Klimont A (2011) A new species of *Mycomya* Rondani from Siberia (Diptera: Mycetophilidae). Acta zoologica cracoviensia 54B: 17-21.
- Kurina O (2008) 4.3.23 Sciaroidea excl. Sciaridae. In: Ziegler J (Ed.) Diptera Stelviana - A dipterological perspective on a changing alpine landscape. Studia Dipterologica Supplement. 16. Ampyx-Verlag, Halle (Saale).
- Kurina O, Ševčík J (2006) Contribution to the knowledge of fungus gnats (Diptera: Sciaroidea excl. Sciaridae) in the Białowieża Primeval Forest including seven species new to Poland. Fragmenta Faunistica 49 (2): 99-104.
- Kurina O, Ševčík J (2012) Notes on *Docosia* Winnertz (Diptera: Mycetophilidae), with description of six new species from Central Asia and the first generic record from the Afrotropical region. Zootaxa 3570: 25-40.
- Kurina O, Hedmark K, Karström M, Kjaerandsen J (2011) Review of the European *Greenomyia* Brunetti (Diptera, Mycetophilidae) with new descriptions of females. ZooKeys 77: 31-50. DOI: 10.3897/zookeys.77.936
- Kurina O, Polevoi A, Götmark F, Økland B, Frank N, Norden B, Hedmark K (2004) Fungus gnats (Diptera: Sciaroidea excl. Sciaridae) in the Swedish boreonemoral forests. Studia dipterologica 11: 471-488.
- Lackschewitz P (1937) Die Fungivoriden des Ost baltischen Gebietes. Arbeiten des Naturf. Vereins zu Riga N.F. 21: 1-47. [In German].
- Laffoon JL (1957) A revision of the Nearctic species of *Fungivora* (Diptera, Mycetophilidae). Iowa State College Journal of Science 31: 141-340.
- Laštovka P, Matile L (1974) Mycetophilidae (Diptera) de Mongolie. Acta zoologica Academiae scientarium Hungaricae 20: 93-135. [In French].
- Laštovka P, Ševčík J (2006) A review of the Czech and Slovak species of *Docosia* Winnertz (Diptera: Mycetophilidae), with atlas of the male and female terminalia. Čas. Slez. Muz. Opava (A) 55: 1-37.
- Lenz F (1927) Die Larve der Mycetophilidae Gnoriste apicalis Mg. als Quellbewohner. Entomologische Mitteilungen 16: 18. [In German].
- Loew H (1869) Diptera Americae septentrionalis indigena. Centuria nona. Berliner Entomologische Zeitschrift 13: 129-186. [In Latin].
- Lundström C (1906) Beiträge zur Kenntnis der Dipteren Finlands. I. Mycetophilidae. Acta Societatis pro Fauna et Flora Fennica 29 (1): 1-50. [In German].
- Lundström C (1909) Beiträge zur Kenntnis der Dipteren Finlands. IV. Supplement: Mycetophilidae. Acta Societatis pro Fauna et Flora Fennica 32: 1-67. [In German].
- Lundström C (1911) Neue oder wenig bekannte europäische Mycetophiliden. Annales Historico-Naturales Musei Nationalis Hungarici 9: 390-419. [In German].
- Lundström C (1912a) Neue oder wenig bekannte europäische Mycetophiliden. Annales Musei Nationalis Hungarici 10: 514-522.
- Lundström C (1912b) Beiträge zur Kenntnis der Dipteren Finlands. VII. Supplement 2. Mycetophilidae, Tipulidae, Cylindrotomidae und Limnobiidae. Acta Societatis pro Fauna et Flora Fennica 36 (1): 1-70. [In German].
- Lundström C (1914) Beiträge zur Kenntnis der Dipteren Finlands IX. Supplement 3. Mycetophilidae. Acta Societatis pro Fauna et Flora Fennica 39 (3): 1-27. [In German].

- Lundström C (1915) Diptera Nematocera aus den arctischen Gegenden Sibiriens. [Resultats scientifiques de l'Expedition Polaire Russe en 1900-1903, sons la direction du Baron E. Toll. Section E: Zoologie. Volume II, livr. 8.]. Memoires de l'Academie Imperiale des Sciences. VIIIe serie. Classe Physico-Mathematique 29: 1-33. [In Germany].
- Lundström C, Frey R (1913) Beitrag zur Kenntnis der Dipterenfauna des Nördl. Europäischen Russland. Acta Societatis pro Fauna et Flora Fennica 37 (10): 1-20. [In German].
- Madwar S (1937) Biology and morphology of the immature stages of Mycetophilidae (Diptera, Nematocera). Philosophical Transactions of the Royal Society of London, Series B 227: 1-110. DOI: 10.1098/rstb.1937.0001
- Matile L (1967) Note sur les Mycetophilidae de la règion pyrénéenne et description de quatre espèces nouvelles. Bulletin de la Société Entomologique De Franc 72: 121-126-208-217. [In French].
- Matile L (1971) Notes sur les Mycetophilidae (Diptera) de la faune de France. 1. Le genre Allodiopsis. L'Entomologiste 27: 64-70. [In French].
- Matile L (1983) Un Sciophila nouveau de la vallee d'Aoste (Alpes italiennes) (Diptera, Mycetophilidae). Revue Franacaise d'entomologie (nouvelle serie) 5: 147-150. [In French].
- Maximova YV (2002) An additional list of the fungus gnats (Diptera, Sciaroidea, excluding Sciaridae) from Kuznetsk Alatau Mountains. International Journal of Dipterological Reasearch 13 (3): 191-199.
- Økland B (1999) New rearing records of forest-dwelling Diptera. International Journal of Dipterological Research 10: 133-146.
- Økland B, Zaitzev AI (1997) Mycetophilids (Diptera, Sciaroidea) from South-eastern Norway. Fauna norvegica, ser. B. 44: 27-37.
- Ostroverkhova GP (1979) Грибные комары (Diptera, Mycetophiloidea) Сибири. [Fungus gnats (Diptera, Mycetophiloidea) of Siberia]. Tomsk University, Tomsk, 308 pp. [In Russian].
- Ostroverkhova GP, Stackelberg AA (1988) 24. Family Mycetophilidae (Fungivordae). In: Bei-Bienko GY (Ed.) Keys to the Insects of the European Part of the USSR. 5 (part 1). Amerind Publishing co., New Delhi, 1233 pp.
- Penttinen J, Ilmonen J, Jakovlev J, Salmela J, Kuusela K, Paasivirta L (2010) Sääsket - Thread-horned flies Diptera: Nematocera. In: Rassi P, Hyvärinen E, Juslén A, Mannerkoski I (Eds) The 2010 Red List of Finnish Species. Ympäristöministeriö & Suomen ympäristökeskus, Helsinki. [In Finnish, English]. URL: http://www.ym.fi/fi-FI/Ajankohtaista/Julkaisut/Erillisjulkaisut/Suomen_lajien_uhanalaisuus__Punainen_kir(4709)
- Petersen FT, Meier R (2001) A preliminary list of the Diptera of Denmark. Steenstrupia 26: 119-276.
- Plachter H (1979) Zur Kenntnis der Praimaginalstadien der Pilzmucken (Diptera, Mycetophiloidea). Teil 3: Die Puppen. Zoologische Jahrbücher Abteilung für Anatomie und Ontologenie der Tiere 101: 255-427. [In German].
- Plassmann E (1980) Drei neue Pilzmucken aus Tirol und Bayern. (Diptera, Nematocera, Mycetophilidae). Spixiana 3: 209-214.

- Plassmann E (1984) Neue Mitteilungen von Pilzmücken aus dem Alpenraum (Diptera, Nematocera, Mycetophilidae). Entomofauna 5: 221-233. [In German].
- Plassmann E (1986) Neun neue Pilzmücken aus der Westpaläarktis (Diptera, Nematocera, Mycetophilidae). Spixiana 9: 143-150.
- Plassmann E (1987) Neun neue Pilzmucken aus der Westpalaarktis. (Diptera, Nematocera, Mycetophilidae). Spixiana 9: 143-150. [In German].
- Plassmann E (1988) Pilzmücken der Nordseeinseln Mellum und Memmert (Insecta, Diptera, Nematocera, Mycetophilidae). Drosera '88: 253-256. [In German].
- Plassmann E (1990) Fünf neue Pilzmücken aus Schweden (Diptera, Nematocera, Mycetophilidae). NachrBl.bayer.Ent. 39 (2): 61-64.
- Plassmann E, Joost W (1986) Beitrag zur Kenntnis der Pilzmückenfauna Thüringens (Insecta, Diptera, Mycetophilidae). Faunistische Abhandlungen Staatliches Museum für Tierkunde Dresden 13: 119-122. [In German].
- Plassmann E, Schacht W (1999) Fundort Schongeising. Zweite Erganzungsliste zu den Pilzmucken mit Beschreibung von funf neuen Arten (Diptera Sciaroidea: Macroceridae, Mycetophilidae). Entomofauna 20: 281-288. [In German].
- Plassmann E, Schacht W (2002) Zweiflügler aus Bayern XXII (Diptera Sciaroidea: Ditomyiidae, Bolitophilidae, Diadocidiidae, Keroplatidae, Mycetophilidae). Entomofauna 23: 237-248. [In German].
- Polevoi A, Hedmark K (2004) New species of the genus *Boletina* Staeger (Diptera, Mycetophilidae) from Fennoscandia. Entomologica Fennica 15: 23-33.
- Polevoi A, Humala A (2005) Насекомые [Insects]. In: Gromtsev A (Ed.) Природные комплексы Вепсской волости: особенности, современное состояние, охрана и использование [Nature complexes of Vepsian Volost: Features, present-day status, conservation and management]. Karelian RC RAS, Petrozavodsk, 172-186 pp. [In Russian].
- Polevoi A, Jakovlev J (2011) A review of the European species of the genus *Tetragoneura* Winnertz (Diptera: Mycetophilidae). Zootaxa 3062: 1-12.
- Polevoi A, Humala A, Jakovlev J (2005) Итоги изучения энтомофауны Кижских шхер за десятилетний период (1994-2003) [Results of ten years (1994-2003) entomological studies in Kizhi Scerries]. In: Ieshko E, Protasov Y (Eds) 10 лет экологическому мониторингу музея-заповедника "Кижи". Итоги, проблемы, перспективы [Ten years of ecological monitoring in the museum-reserve "Kizhi". Results, problems, perspectives]. Karelian RC RAS, Petrozavodsk, 101-119 pp. [In Russian].
- Polevoi A, Jakovlev J, Zaitzev A (2006) Fungus gnats (Diptera: Bolitophilidae, Diadocidiidae, Keroplatidae and Mycetophilidae) new to Finland. Entomologica Fennica 17: 161-169.
- Polevoi AV (2000) Fungus gnats (Diptera: Bolitophilidae, Ditomyiidae, Keroplatidae, Diadocidiidae, Mycetophilidae) in Karelia. Karelian Research Centre, Russian Academy of Sciences, Petrozavodsk, 84 pp. [In Russian].
- Polevoi AV (2001a) New and little known species of the fungus gnat subfamilies Mycomyinae and Sciophilinae (Diptera, Mycetophilidae) from Eastern Fennoscandia. Entomological Review 81 (2): 207-214.

- Polevoi AV (2001b) The study of forest Diptera fauna in Koitajoki area. In: Hokkanen TJ (Ed.) Diversity studies in Koitajoki Area (North Karelian Biosphere Reserve, Ilomantsi, Finland). Metsähallituksen luonnonsuojelujulkaisuja Sarja A, 131. Metsähallitus, Vantaa, 218 pp. [ISBN 952-446-325-3].
- Polevoi AV (2003) Review of the Fennoscandian species of the genus *Syntemna* Winnertz (Diptera, Mycetophilidae) including the description of a new species. Studia dipterologica 10: 133-142.
- Polevoi AV (2010) Fungus gnats (Diptera: Bolitophilidae, Keroplatidae, Mycetophilidae) of Pasvik strict nature reserve. Trudy Karel'skogo NC RAN. Seriya biogeografiya 10: 95-104. [In Russian].
- Polevoi AV (2013a) Diptera Karelica. URL: http://flies.krc.karelia.ru/index.html
- Polevoi AV (2013b) On the systematics and distribution of some poorly known species of *Boletina* (Diptera: Mycetophilidae) in northern Europe, with the description of a new species. Zoosystematica Rossica 22: 114-122.
- Rindal E, Gammelmo Ø (2007) On the family Diadocidiidae (Diptera, Sciaroidea) in Norway. Norwegian Journal of Entomology 54: 69-74.
- Rindal E, Gammelmo Ø, Søli GEE (2008) On the family Keroplatidae in Norway (Diptera, Mycetophiliformia). Norwegian Journal of Entomology 55: 81-85.
- Sasakawa M, Kimura T (1974) Japanese Mycetophilidae (Diptera). 7. Genus *Boletina* Staeger. The Scientific reports of Kyoto Prefectural University (Agric.) 26 (197): 44-66.
- Ševčík J (1999) Fifty species of fungus gnats (Diptera: Mycetophilidae) new for the Czech Republic and/or Slovakia, including a new species of *Allodia* Winnertz. Casopis Slezského zemského muzea, Série A, Vedy prírodní (Opava) 48: 97-105.
- Ševčík J (2001a) A new species of *Dynatosoma*, fourteen new synonyms and other data on fungus gnats (Diptera: Mycetophilidae) from central and northern Europe. Studia dipterologica 8 (1): 143-152.
- Ševčík J (2001b) New records of Diadocidiidae, Keroplatidae and Mycetophilidae (Diptera: Sciaroidea) from the Czech Republic. Casopis Slezskeho Musea v Opava (A) 50: 159-169.
- Ševčík J (2003) The identity of *Mycetophila obsoleta* Zetterstedt, 1852 and the description of *M. boreocruciator* sp. n. (Diptera, Mycetophilidae). Biologia, Bratislava, 58: 201-204.
- Ševčík J (2004) New data on Sciaroidea (Diptera) from the Czech and Slovak Republics, with description of seven new species of Mycetophilidae. Casopis Slezskeho Musea v Opava (A) 53: 49-74.
- Ševčík J (2010) Czech and Slovak Diptera associated with fungi. Silesian Museum, Opava, 112 pp. [ISBN 978-80-86224-84-8]
- Ševčík J, Košel V (2009) Mycetophilidae Newman, 1834. In: Jedlička L, Kúdela M, Stloukalová V (Eds) Checklist of Diptera of the Czech Republic and Slovakia. 2. Comenius University, Bratislava. URL: http://dfs.fns.uniba.sk/diptera2009/start.htm [ISBN 978-80-969629-4-5].
- Ševčík J, Kurina O (2011) Fungus gnats (Diptera: Sciaroidea) of the Gemer region (Central Slovakia): Part 2 – Mycetophilidae. Casopis Slezskeho Musea v Opava (A) 60: 97-126.

- Ševčík J, Roháček J (2008) Fungus gnats (Diptera: Mycetophilidae and Keroplatidae) reared from grass and sedge tussocks in the Czech Republic. Casopis Slezskeho Musea v Opava (A) 57: 175-178.
- Ševčík J, Kjaerandsen J, Marshall SA (2012) Revision of *Speolepta* (Diptera: Mycetophilidae), with descriptions of new Nearctic and Oriental species. Canadian Entomologist 144: 93-107. DOI: 10.4039/tce.2012.10
- Soli G, Rindal E, Hansen LO (2009) New records of fungus gnats for Norway (Diptera, Mycetophilidae). Norwegian Journal of Entomology 56: 69-73.
- Søli G, Kjaerandsen J (2008) Additions to the Norwegian fauna of fungus gnats (Diptera, Mycetophilidae). Norwegian Journal of Entomology 55: 31-41.
- Søli G, Rindal E (2012) Fungus gnats (Diptera, Mycetophilidae) from Finnmark, northern Norway. Norwegian Journal of Entomology 59: 158-181.
- Søli GE (1997) The systematics and phylogeny of *Coelosia* Winnertz, 1863 (Diptera, Mycetophilidae). Entomologica scandinavica Supplement 50: 57-139.
- Stackelberg AA (1943) New Palaearctic fungus gnats (Diptera, Fungivoridae). Proceedings of the Royal Entomological Society of London. Series B 12: 167-171.
- Subbotina EY, Maximova YV (2011) New and little known species of fungus gnats (Diptera, Mycetophilidae) from Western Siberia. Euroasian Entomological Journal 10 (2): 213-216. [In Russian].
- Väisänen R (1984) A monograph of the genus *Mycomya* Rondani in the Holarctic region (Diptera, Mycetophilidae). Acta Zoologica Fennica 177: 1-346.
- Yakovlev EB, Scherbakov AN, Polevoi AV, Humala AE (2000) Insect fauna of Paanajärvi National Park and proposed Kalevala National Park with particular emphasis on Saproxylic Coleoptera, Diptera and Hymenoptera. In: Heikkilä R, Heikkilä M, Polevoi AV, Yakovlev EB (Eds) Biodiversity of old-growth forests and its conservation in the northwestern Russia. North Ostrobothnia Regional Environmental Centre, Oulu, 103-157 pp.
- Zaitzev AI (1982a) Dipterans of the genus *Acnemia* Winn. (Mycetophilidae) in the fauna of Holarctic. 2. Zoologicheskii zhurnal 61: 867-874.
- Zaitzev AI (1982b) Holarctic fungus gnats of the genus *Sciophila* Meig. Nauka, Moscow, 75 pp. [In Russian].
- Zaitzev AI (1987) New and little-known species of the genus *Epicypta* Winn. (Diptera, Mycetophilidae) from Primorsky Kray. In: Kapustina OG (Ed.) Taxonomy of the insects of Siberia and Far East of the USSR. Vladivostok, 132 pp. [In Russian].
- Zaitzev AI (1988) Fungus gnats of the sericoma, griseicolle and ruficorne species groups of the genus *Brevicornu* Marshall (Diptera, Mycetophilidae) of Holarctic fauna. Entomologichekoe obozrenie 67: 391-404. [In Russian].
- Zaitzev AI (1993) Three new species of fungus gnats of the genera *Synplasta* Skuse and *Allodiopsis* Tuomik. (subgenus Myrosia Tuomik) from Russia (Diptera, Mycetophilidae). Lambillionea 93: 215-218.
- Zaitzev AI (1994) Fungus gnats of the fauna of Russia and adjacent regions. Part 1. Nauka, Moscow, 288 pp. [In Russian].
- Zaitzev AI (1998) Six new species of fungus gnats of the genus *Mycetophila* Meigen from Russia (Diptera, Mycetophilidae). Studia dipterologica 5: 211-216.

- Zaitzev AI (1999) New species of fungus gnats (Diptera: Mycetophilidae) from Russia and Ukraine. International Journal of Dipterological Research 10: 97-100.
- Zaitzev AI (2003) Fungus gnats (Diptera, Sciaroidea) of the fauna of Russia and adjacent regions. Part 2. International Journal of Dipterological Research 14: 77-386.